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University of Toronto

CURRICULUM

FOR

JUNIOR MATRICULATION

1919-1920

UNIVERSITY OF TORONTO PRESS

University of Toronto

CURRICULUM

FOR

JUNIOR MATRICULATION

1919-1920

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MATRICULATION.

GENERAL REGULATIONS.

The subjects of Pass Junior Matriculation are as follows:

Latin (Authors, one paper; Composition, one paper).
English (Literature, one paper; Composition, one paper).
History (British and Canadian, one paper; Greek and Roman, one paper).
Mathematics (Algebra, one paper; Geometry, one paper).

Any two of:

Greek (Authors, one paper; Composition, one paper).
French (Authors, one paper; Composition, one paper).
German (Authors, one paper; Composition, one paper).
Experimental Science (**Physics,** one paper; **Chemistry,** one paper).

In certain cases foreign students may present themselves for Examination in their native language instead of Greek or French or German, when the language and the curriculum in that language have been approved by the Senate. The Examination in an approved language consists of two papers, similar in character to those in English.

The subjects of Honour Junior Matriculation are as follows:

Greek (Authors, one paper; Composition, one paper).
Latin (Authors, one paper; Composition, one paper).
English (Literature, one paper; Composition, one paper).
French (Authors, one paper; Composition, one paper).
German (Authors, one paper; Composition, one paper).
History (Mediaeval History, one paper; Modern History, one paper).
Mathematics (**Algebra,** one paper; **Geometry,** one paper; **Trigonometry,** one paper; **Problems,** one paper).
Science (**Biology**—Zoology, one paper; **Botany,** one paper; **Physics,** one paper; **Chemistry,** one paper).

STANDARDS.

The pass standard is forty per cent. of the marks assigned to a paper with an average of sixty per cent. with such modification or exceptions as may be deemed proper in consideration of the total number of marks and the confidential reports of the Principals.

A candidate who has obtained the average of sixty per cent. on all the papers but has failed to obtain forty per cent. in at most three of these papers may complete Junior Matriculation by obtaining forty per cent. on each of these papers at any one subsequent examination.

A candidate who has obtained forty per cent. on each of at least eight papers, with an average of sixty per cent. on the same, will be credited with these papers. In order to complete his Matriculation, he must obtain at one subsequent examination, forty per cent. on each of the remaining papers, with an average of sixty per cent.

The first class honour standard is seventy-five per cent., the second class sixty per cent., and the third class fifty per cent. of the marks assigned to the subject with not less than forty per cent. on each of the papers in a subject.

A candidate for honours and scholarships in the Faculty of Arts will be examined only on the honour papers in a subject, but a candidate who fails to obtain honours may receive pass standing in the subject.

A candidate who has passed Junior Matriculation may present himself at a subsequent examination for Junior Matriculation Scholarships. A person to whom a scholarship has been awarded may not compete a second time.

FACULTY OF ARTS.

A candidate who has passed the Junior Matriculation and proposes to enter the Faculty of Arts, must produce satisfactory certificates of good character and of having completed the sixteenth year of his age on or before the first of October of the year in which he registers.

The subjects for Matriculation in Arts are:

Latin (Authors, one paper; Composition, one paper).

English (Literature, one paper; Composition, one paper).

History (British and Canadian, one paper; Greek and Roman, one paper).

Mathematics (Algebra, one paper; Geometry, one paper).

Any two of:

Greek (Authors, one paper; Composition, one paper).

French (Authors, one paper; Composition, one paper).

German (Authors, one paper; Composition, one paper).

Experimental Science (**Physics,** one paper; **Chemistry,** one paper).

A candidate for Pass Junior Matriculation may enter the General Course but not a Special Course in the First Year.

A candidate preparing to enter an undergraduate Special Course should select his options so as to meet the requirements of that course as found in the following paragraphs:

Special Course Entrance Requirements.

Unless special permission is granted by the Council, every student entering a special course of the First Year must present a certificate based upon the work of Honour Matriculation or of an equivalent Examination in at least four subjects (of which Latin and Mathematics, *i.e.*, Algebra and Geometry, are compulsory) with such standing therein as is specified under the requirements of the Special Courses.

"Honours" shall be interpreted as at least fifty per cent. and "Pass" as at least forty per cent. of the marks assigned to a subject of Honour Matriculation or of an equivalent Examination.

The requirements for entrance to the Special Courses are as follows:

Classics:—Honours in Greek and Latin, Pass in Mathematics (Algebra and Geometry) as well as in at least one of French, German, Physics, Biology, preferably French or German.

Greek and Hebrew:—Honours in Greek, Pass in Latin, Mathematics (Algebra and Geometry) as well as in at least one of English, French, German.

Modern Languages:—Honours in French and English *or* History *or* German, Pass in Latin, Mathematics (Algebra and Geometry).

English and History (Class. Opt.):—Honours in Greek, Latin and English, Pass in Mathematics (Algebra and Geometry), with a recommendation that French *or* German be taken in addition.

English and History (Mods. Opt.):—Honours in Latin, French, English *or* German *or* History, Pass in Mathematics (Algebra and Geometry).

Modern History:
Political Science:

Honours in English, History, and in one of Latin, French, German, Pass in Latin and Mathematics (Algebra and Geometry) as well as in at least one of Greek, French, German. Latin must be taken either as a Pass or as an Honour Language.

Commerce and Finance:—Honours in English, Pass in Latin, Mathematics (Algebra, Geometry, and Trigonometry) and in either French or German.

Mathematics and Physics:—Honours in Mathematics (Algebra, Geometry and Trigonometry), pass in Latin, Physics, as well as in either French or German.

Physics:
Biology:
Biological and Physical Sciences:
Physiological and Biochemical Sciences:
Chemistry and Mineralogy:
Geology and Mineralogy:
Household Science:
Science for Teachers

Pass in Latin and Mathematics (Algebra and Geometry and Trigonometry) as well as in either French, or German and at least one of Physics, Biology, Chemistry.

FACULTY OF MEDICINE.

A candidate who has passed the Junior Matriculation and proposes to enter the Faculty of Medicine, must produce satisfactory certificates of good character and of having completed the sixteenth year of his age on or before the first of October of the year in which he registers.

The subjects for Matriculation in Medicine are:

Latin (Authors, one paper; Composition, one paper).

English (Literature, one paper; Composition, one paper).

History (British and Canadian, one paper; Greek and Roman, one paper).

Mathematics (Algebra, one paper; Geometry, one paper).

Any two of:

Greek (Authors, one paper; Composition, one paper).

French (Authors, one paper; Composition, one paper).

German (Authors, one paper; Composition, one paper).

Experimental Science (**Physics,** one paper; **Chemistry,** one paper).

A candidate who submits a complete certificate of Entrance to the Faculties of Education will be granted the status of an undergraduate in Medicine on payment of the statutory fee of five dollars.

It is recommended that candidates for Matriculation in Medicine take Experimental Science (Chemistry and Physics) as one of the options. This recommendation is the preliminary step towards requiring this subject from all students entering the Faculty of Medicine.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

A candidate who has passed the Matriculation Examination for the Faculty of Applied Science and Engineering must produce satisfactory certificates of good character and of having completed the seventeenth year of his age on or before the first of October of the year in which he registers.

The subjects for matriculation in Applied Science and Engineering are:

English (Literature, one paper; Composition, one paper).

History (British and Canadian, one paper; Greek and Roman, one paper).

Honour Mathematics (**Algebra,** one paper; **Geometry,** one paper; **Trigonometry,** one paper; at least forty per cent. on each of the subjects in the group).

Any three of:

Latin (Authors, one paper; Composition, one paper).

Greek (Authors, one paper; Composition, one paper).

French (Authors, one paper; Composition, one paper).

German (Authors, one paper; Composition, one paper).

Experimental Science (**Physics,** one paper; **Chemistry,** one paper).

Candidates for Matriculation in this Faculty are advised to take the complete Junior Matriculation Examination in one year, and in a subsequent year, Honour Mathematics and Honour English.

In selecting the options it is recommended that students take French, German and Experimental Science. In the Department of Architecture, French is required, in the Departments of Applied Chemistry, Chemical Engineering, and of Mechanical Engineering, it is desirable that students take German.

FACULTY OF FORESTRY.

A candidate who has passed the Matriculation Examination and proposes to enter the Faculty of Forestry must produce satisfactory certificates of good character and of having completed the sixteenth year of his age on or before the first of October of the year in which he registers.

The subjects for Matriculation in Forestry are:

English (Literature, one paper; Composition, one paper).

History (British and Canadian, one paper; Greek and Roman, one paper).

Mathematics (Algebra, one paper; Geometry, one paper).

Any three of:

Latin (Authors, one paper; Composition, one paper).

Greek (Authors, one paper; Composition, one paper).

French (Authors, one paper; Composition, one paper).

German (Authors, one paper; Composition, one paper).

Experimental Science (Physics, one paper; Chemistry, one paper).

For the Session 1918-1919 the same standard will obtain for all subjects, except English and Mathematics, in which fifty per cent. will be required on each paper with sixty per cent. on each subject.

DEPARTMENT OF MUSIC.

The subjects for Matriculation in Music are:

English (Literature, one paper; Composition, one paper).

Any two of:

Latin (Authors, one paper; Composition, one paper).

Greek (Authors, one paper; Composition, one paper).

French (Authors, one paper; Composition, one paper).

German (Authors, one paper; Composition, one paper).

A candidate for the degree of Bachelor of Music must complete his Matriculation prior to admission to the examination of the final year.

The pass standard is the same as that for pass Junior Matriculation.

A candidate who has obtained the average of sixty per cent. on all the six papers but has failed to obtain forty per cent. in at most two of these papers may complete Junior Matriculation by obtaining forty per cent. on each of these papers at any one subsequent examination.

A candidate who has obtained forty per cent. on each of at least four papers, with an average of sixty per cent. on the same, will be credited with these papers. In order to complete his Matriculation, he must obtain at one subsequent examination, forty per cent. on each of the remaining papers, with an average of sixty per cent.

EXAMINATIONS.

The examination for pass and honour Junior Matriculation is held annually in June at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

Applications accompanied by the prescribed fee must be sent not later than the 15th of May, to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

Scholarship candidates must also send a special application by the same date to the Registrar according to a form to be obtained from him. The application must be accompanied by the fee when the candidate intends to write at the University; when he proposes to write at some other centre, the ordinary application and the fee must be sent to the local Public School Inspector.

A Junior Matriculation examination will be held in June at such centres outside Ontario as may from time to time be authorized by the Senate. Applications for the establishment of such local centres must be made to the Registrar not later than the 15th of April in each year. Applications from candidates for this examination must be sent to the Registrar not later than the 1st of May.

The presiding examiner's fee of $5.00 per diem, together with any other necessary expenses in connection with a local examination, must be met by the candidates at the centre, or by the authorities of the School or College on whose application it is held.

SPECIAL MATRICULATION CONDITIONS.

A candidate who is actually engaged in a mercantile, industrial, or other occupation may proceed to pass Junior Matriculation under the following conditions:—

(*a*) He may present himself for one or more subjects at any June or September Examination.

(*b*) At any such Examination he will receive credit for a subject or subjects on obtaining forty per cent. in each paper and an aggregate of sixty per cent. of the total marks assigned to such subject or subjects. There are two papers given in each subject.

(*c*) Matriculation must be completed under these conditions within four consecutive years.

In order to secure credit for the subject or subjects written, a candidate who desires to matriculate under these regulations must, immediately on receipt of the statement of his marks, return the same to the Secretary of the University Matriculation Board, Parliament Buildings, accompanied by a certificate from his employer to the following effect:—

.....191..

I,.....do hereby certify that.....
was in my employ from.....to.....in the capacity of.....and that this employment made it impossible for him to attend the regular day sessions of a secondary school.
My business is that of.....
located at.....
Give business address in full

.....
Signature in full

To the Secretary of University Matriculation Board.

A candidate for matriculation in Applied Science and Engineering under these regulations may divide the examination in Honour Mathematics, in which case he will receive credit for any of the papers, viz.: Algebra, Geometry, Trigonometry—in which he receives at least forty per cent. of the marks assigned to the paper.

Candidates for Matriculation in Music under these regulations must complete the work within two years.

Exceptional cases, for which provision is not made under these regulations, may be determined as they arise by the University Matriculation Boards.

SUPPLEMENTAL MATRICULATION EXAMINATION.

1. The Supplemental Pass Junior Matriculation examination is conducted by the Department of Education for the University Matriculation Board at the following centres:—

(*a*) The University of Toronto; Queen's University, Kingston; McMaster University, Toronto; Western University, London.

(*b*) Any of the following, upon request:—Windsor, Chatham, Sarnia, St. Thomas, Woodstock, Brantford, Simcoe, Cayuga, Welland, St. Catharines, Hamilton, Goderich, Stratford, Berlin, Guelph, Walkerton, Owen Sound, Orangeville, Barrie, Whitby, Bowmanville, Cobourg, Lindsay, Peterborough, Belleville, Picton, Napanee, Brockville, Kemptville, Prescott, Morrisburg, Cornwall, Alexandria, Vankleek Hill, Ottawa, Smith's Falls, Renfrew, Bracebridge, North Bay, Sault Ste. Marie, Port Arthur, Haileybury.

(*c*) Elsewhere in Ontario upon request, and if approved by the University Matriculation Board.

(*d*) Elsewhere in Canada, upon request of one of the aforesaid Universities and approval of the Board.

2. Applications to write on the examination, accompanied by the necessary fee, shall be received at the Department of Education as follows:—

(*a*) Up to September 1st, from those who wish to write at any centre authorized in Ontario.

(*b*) Up to August 25th, from those who wish to write elsewhere in Ontario.

(*c*) Up to August 1st, from those who, through one of the aforesaid Universities, make application to write outside of the Province of Ontario.

3. On payment of the required fee with one dollar additional, a candidate who has failed to make application as specified in the foregoing regulation (2) may be admitted to the examination at a centre already established, provided the accommodation is adequate and the number of question papers sufficient.

4. The subjects of the examination, the prescription of work and the standard required shall be the same as for the Midsummer Pass Junior Matriculation examination of the same year.

5. The following are eligible to become candidates at this examination:

(*a*) Those who are applicants for the complete Matriculation examination.

(*b*) Those who are completing the Matriculation examination under the regulations in force in any previous year.

(*c*) Those who are applicants for Matriculation standing in certain papers.

6. (*a*) Candidates may write at any one of the four University centres mentioned in 1 (*a*) without any additional cost to themselves.

(*b*) Candidates who write at any other centre, in addition to paying the fee required in (7), must also defray the local expenses of conducting the examination. These include the cost of supplies, any charge for the examination room, express charges, and the allowance to the Presiding Officer at $5 per day.

7. The fee for writing on the Supplemental Examination shall be $2.00 for each paper, with a maximum fee of $10.00.

8. Forms of application and copies of the time-table may be obtained after July 1st, on application to the Secretary, University Matriculation Board, Toronto.

A Supplemental Examination in Honour Mathematics will be held in September, 1918.

EQUIVALENT EXAMINATIONS.

A person who has passed the Matriculation examination of another University may be admitted *ad eundem statum* on such conditions as the Senate, on application, may prescribe.

The local examinations conducted by the University of Oxford and the University of Cambridge may be accepted *pro tanto.*

Certificates of having passed the subjects common to the Matriculation and other examination of any of the following examinations will be accepted *pro tanto*, provided always that the standards of these certificates as to subjects and percentages meet the requirements of this University.

Province of Ontario.

The examinations for Entrance to Normal Schools or for Entrance to Faculties of Education or examinations of the same standard under other names.

Candidates who have already passed Part I. of the pass Junior Matriculation, or of the Junior Leaving examination, will not be required to pass again in the subjects thereof.

Province of Quebec.

The Associate in Arts examination.

Province of New Brunswick.

The examination for Superior and Grammar School Licenses.

Province of Nova Scotia.

The Junior and Senior Leaving examinations (Grades XI. and XII.).

Province of Manitoba.

The Second Class Teachers' examination.

Province of British Columbia.

The Intermediate and Senior Grade examination.

Province of Prince Edward Island.

The First Class Teachers' License examination.

Province of Alberta.

The Standard VII. and VIII. examinations.

Province of Saskatchewan.

The First and Second Class Teachers' examinations.
The Senior and Junior Matriculation examinations.

Newfoundland.

Associate Grade examinations.

Candidates whose certificates do not cover all the subjects may complete matriculation by passing in the remaining subjects as prescribed by the University, or by passing in the subjects of similar standard as prescribed by the Education Department of the Province by which the certificate was issued.

The Senate will consider applications for the recognition of certificates other than those mentioned, as occasion may require.

FEES.

The Fees payable are as follows:—

For registration of certificates for other than University purposes	$5.00
For registration of certificates other than those of Ontario, which exempt the applicant from the full Matriculation examination	5.00
For admission *ad eundem statum*	5.00

SCHOLARSHIPS.

Where there is no letter prefixed, the scholarship is open to all competitors and is tenable in any one of the colleges. In all other cases, the letter U. indicates University College; the letter V., Victoria College; and the letter T., Trinity College. The student to whom one of these scholarships is awarded is required to enrol in each year of his course in the College to which the scholarship belongs.

General Proficiency.

(1) The Prince of Wales Scholarship, the gift of King Edward VII., of the value of $50, and the First Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $60, with free tuition for four years, of a total value of $270.

T. (2) The Upper Canada College-Trinity Scholarship, the gift of Upper Canada College Old Boys, who are alumni of Trinity College, of the value of $100, with free tuition for four years, of a total value of $260.

The successful candidate must obtain first class honours in at least one department. Pass papers rank at half the value of Honour papers. The sum of $60 will be paid in equal terminal instalments in the first year, and $40 in the second year.

U. (3) The Gibson Scholarship, the gift of the Hon. J. M. Gibson, of the value of $100, with free tuition for three years, of a total value of $220.

T. (4) The F. A. Bethune Scholarship, the gift of the trustees of the F. A. Bethune Memorial Fund, of the value of $60, with free tuition for four years, of a total value of $220.

This Scholarship is open for competition to boys who have passed through the Sixth Form of Trinity College School. The conditions are the same as for 2, except that the money will all be paid in the first year in equal terminal instalments.

(5) The Second Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $55, with free tuition for four years, of a total value of $215.

(6) The Third Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $50, with free tuition for four years, of a total value of $210.

(7) The Fourth Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $45, with free tuition for four years, of a total value of $205.

(8) The Fifth Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $40, with free tuition for three years, of a total value of $160.

(9) The Sixth Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $35, with free tuition for three years, of a total value of $155.

(10) The Seventh Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $30, with free tuition for three years, of a total value of $150.

(11) The West Durham Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $25.

This scholarship is preferentially tenable by a scholar from the Bowmanville High School.

Candidates for these scholarships are required to obtain first class honours in at least one department.

THE JOHN McCRAE SCHOLARSHIPS

Two Scholarships each consisting of half the income of $425, to be awarded every two years beginning in 1919.

The purpose of the Scholarships is to assist youths of ability, promise and approved academic standing who desire to acquire the education represented by an Arts degree, but whose circumstances are such as to make the fulfilment of that desire impracticable without assistance. It is, moreover, desired that the scholarships should be used to stimulate such ambition among the pupils of the Guelph Collegiate Institute, John McCrae's home and boyhood school from which he matriculated and entered the University of Toronto. The award will, therefore, be limited to Matriculants into the University of Toronto from the Guelph Collegiate

Institute, or failing eligible and acceptable candidates therefrom in any year, from among other Canadian Matriculants. The award will go to a male candidate if there be one eligible and acceptable—if not, the award may in exceptional cases be made to a female. A scholar may be chosen from matriculants of the year in which the award is made or the previous year. If the award is made to a matriculant of the previous year and one year of the scholar's course for the degree has already been passed the award may be limited to the remaining three years of the course.

Proficiency in Two Departments.

CLASSICS AND MODERN LANGUAGES.

The First Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $60, with free tuition for four years, of a total value of $220.

The Second Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $55, with free tuition for four years, of a total value of $215.

The Third Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $40, with free tuition for three years, of a total value of $160.

The Fourth Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $35, with free tuition for three years, of a total value of $155.

CLASSICS AND MATHEMATICS.

The First Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $60, with free tuition for four years, of a total value of $220.

The Second Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $40, with free tuition for three years, of a total value of $160.

MODERN LANGUAGES AND MATHEMATICS.

The First Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $60, with free tuition for four years, of a total value of $220.

The Second Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $40, with free tuition for three years, of a total value of $160.

MODERN LANGUAGES AND SCIENCE.

The First Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $60, with free tuition for four years, of a total value of $220.

The Second Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $40, with free tuition for three years, of a total value of $160.

MATHEMATICS AND SCIENCE.

The First Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $60, with free tuition for four years, of a total value of $220.

The Second Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $40, with free tuition for three years, of a total value of $160.

ENGLISH, HISTORY AND GEOGRAPHY.

T. The Burnside Scholarship, founded in memory of the late Dr. Burnside, of the value of $40, with free tuition for four years, of a total value of $200.

Candidates for these scholarships must obtain first class honours in one of the specified departments and at least second class in the other.

Proficiency in One Department.

CLASSICS.

V. The Martha Bell Scholarship, the gift of Professor A. J. Bell, of the value of $100, with free tuition for four years, of a total value of $260.

T. The Wellington Scholarship, founded by the first Duke of Wellington, of the value of $80, with free tuition for four years, of a total value of $240.

U. The McCaul Scholarship, the gift of G. A. H. Fraser, M.A., formerly Fellow in Classics 1889-91, Andrew Melville Stewart, M.A., LL.B., Honour graduate in Classics, 1891, and Principal Hutton, of the value of $75, with free tuition for four years, of a total value of $235.

T. The Bishop Strachan Scholarship, founded in memory of the first Bishop of Toronto, of the value of $40, with free tuition for four years, of a total value of $200.

The First Mary Mulock Scholarship, the gift of the late Mrs. Mulock, of the value of $60, with free tuition for three years, of a total value of $180.

V. The Flavelle Scholarship, the gift of J. W. Flavelle, LL.D., of the value of $60, with free tuition for three years, of a total value of $180.

The Second Mary Mulock Scholarship, the gift of the late Mrs. Mulock, of the value of $60, with free tuition for two years, of a total value of $140.

V. The W. E. H. Massey Scholarship, the gift of the late W. E. H. Massey, Esq., of the value of $50. with free tuition for two years, of a total value of $130.

GREEK.

The George R. R. Cockburn Scholarship, the gift of the late Mary Cockburn. Awarded to the successful candidate at the scholarship examination who ranks highest in First Class Honours in Greek.

This scholarship is tenable with any other University scholarship.

MODERN LANGUAGES.

T. The Dickson Scholarship, the gift of the late William Dickson, Esq., of the value of $40, with free tuition for four years, of a total value of $200.

The First Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $60, with free tuition for three years, of a total value of $180.

The Second Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $30, with free tuition for three years, of a total value of $150.

MATHEMATICS.

T. The Wellington Scholarship, founded by the first Duke of Wellington, of the value of $80, with free tuition for four years, of a total value of $240.

T. The Burnside Scholarship, founded in memory of the late Dr. Burnside, of the value of $40, with free tuition for four years, of a total value of $200.

The First Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $60, with free tuition for three years, of a total value of $180.

The Second Edward Blake Scholarship the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $30, with free tuition for three years, of a total value of $150.

SCIENCE.

T. The Dickson Scholarship, the gift of the late William Dickson, Esq., of the value of $40, with free tuition for four years, of a total value of $200.

The First Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $60, with free tuition for three years, of a total value of $180.

The Second Edward Blake Scholarship, the gift of the Hon. Edward Blake, ex-Chancellor of the University, of the value of $30, with free tuition for three years, of a total value of $150.

Candidates for these scholarships must obtain first class honours in their departments.

The Leonard McLaughlin Scholarship.

T. This scholarship has been endowed by Mr. and Mrs. Michael McLaughlin, of Toronto, in memory of their only son Leonard, who was at the time of his death, December 10th, 1899, an undergraduate of Trinity College. As he was a pupil at Upper Canada College from 1890 to 1896, only pupils of that school are eligible for the scholarship. This award will be made by a board consisting of the Provost of Trinity College with the Principal and the Classical Master of Upper Canada College to such candidate as, without written examinations, shows evidence of possessing good scholarship in Classics, as well as manliness, a sense of honour, and a strong moral character. Failing a suitable candidate in Classics, the Board may at its discretion select one in Modern Languages, though it is not under any obligation to make a selection in any given year.

Successful candidates must pursue a course of study in Classics or Modern Languages to the satisfaction of the Board. In case of necessity, to be by it determined, the Board may allow a postponement of the time of beginning the course or an interruption of the same.

The scholarship is worth $200; $100 will be paid to successive holders at the end of the Michaelmas Term in the First Year, and $100 at the end of the Michaelmas Term in the Second Year.

The Cooper Exhibition.

T. These two exhibitions, founded by the Rev. C. W. Cooper, of the value of $100 each, are open to any matriculated student of Trinity College not holding a scholarship, with a preference to the sons of clergymen. The exhibitioners are nominated by the Most Reverend the Lord Bishop of Toronto.

The Mackenzie Bursaries.

T. Sir William Mackenzie, of Toronto, offers ten Bursaries of $100 each. to be given to resident students in Arts enrolling in Trinity College. A preference will be given to Presbyterians.

Corporation Bursaries.

T. The Corporation has also provided that five Bursaries of a value of $50 per annum be open every year for a period not exceeding three years. Any student who shall have passed the Matriculation examination, and shall have satisfied the Executive Committee that he cannot without the aid thus afforded, avail himself of the advantage ot a University education, will be eligible for a bursary, provided that he is not the holder of a scholarship or exhibition. *Caeteris paribus* the sons of clergymen will be preferred.

Scholarships, exhibitions and bursaries will be forfeited if the holder fails to keep a term, or to pass any examination at the regular time.

REGULATIONS REGARDING THE UNIVERSITY SCHOLARSHIPS.

The marks for all classes of scholarships will be assigned in the following proportions:

CLASSICS	Latin	600	
	Greek	600	
			1200
MATHEMATICS			1200
MODERN LANGUAGES	English	400	
	French	400	
	German	400	
			1200
SCIENCE	Chemistry	400	
	Physics	400	
	Biology (Botany, Zoology)	400	
			1200
HISTORY			200

Candidates for scholarships shall at the same examination pass in all the subjects necessary for Junior Matriculation.

A candidate to whom a scholarship has been awarded at a Junior Matriculation examination may not compete for a scholarship at a subsequent Matriculation examination.

With the exception of the Prince of Wales Scholarship, no one shall be entitled to hold more than one University scholarship; but any one who, but for this provision, would have been entitled to a second scholarship will be published in the lists.

College Scholarships may be held with University Scholarships.

Every candidate for a Junior Matriculation scholarship shall, on application for examination, sign a declaration to the effect that he intends to proceed to a degree in Arts in this University.

A candidate competing for University scholarships must indicate at the time of application for examination the College in which he intends to register.

No scholarship will be awarded save on condition that the candidate becomes a matriculated student in actual attendance in this University, through enrolment in one of the colleges.

Free tuition awarded will be available on the following conditions:—For the First Year on the award of the scholarship; for any year after the first on proof that the claimant has passed his examination for the preceding year with a first class in an honour course.

In case in any year any scholarship be not taken, it will be allowable to award such scholarship, or some part thereof, to a candidate who has shown special excellence in the examination in some other group and has taken scholarship rank therein, but has failed to win a scholarship therein.

These regulations are subject to change by the Senate.

REGULATIONS RESPECTING UNIVERSITY COLLEGE AND VICTORIA COLLEGE SCHOLARSHIPS.

Scholarships in University College and in Victoria College are tenable with an Edward Blake Scholarship, always providing that the winner be in first class honours in Classics at Matriculation and becomes and continues to be a registered student in attendance upon lectures either in Classics or in English and History with the Classical option in the College by which the scholarship is awarded. In the event of no eligible candidate being forthcoming at Matriculation for either of these scholarships, the scholarships will be held over until the year following, when two scholarships will be offered.

REGULATIONS RESPECTING TRINITY COLLEGE SCHOLARSHIPS.

The holders of scholarships are ordinarily required to reside in College, but when they reside with their parents or guardians by permission of the Provost, they will be allowed free tuition when such is the whole or part of the emolument of their scholarships. The condition as to the residence is absolute in the case of the Upper Canada College-Trinity, the F. A. Bethune and the Leonard McLaughlin Scholarships.

In order to hold their scholarships in the succeeding years, candidates must retain the positions in their departments which they obtained at Junior Matriculation.

JUNIOR MATRICULATION.

FOR PASS.

Greek.

Translation into English of passages from the prescribed texts, with questions thereon.

Translation at sight of simple narrative passages similar to the Xenophon prescribed.

Questions on Greek accidence and on the common rules of Greek syntax to test the candidate's accuracy and comprehension in such matters as are needful for the intelligent reading of his texts.

The following are the prescribed texts:—

1920 and 1922: Xenophon, Philpotts and Jerram, Easy Selections from Xenophon, chaps. 3, 4, 5; Homer, Iliad, VI., 66-118 and 237 to the end.

1921: Xenophon, Philpotts and Jerram, Easy Selections from Xenophon, chaps. 3, 4, 5; Homer, Iliad, I., 1-350.

Two papers will be set: (1) Prescribed texts; (2) translation at sight, accidence and syntax.

Latin.

Translation at sight of passages of average difficulty from Cæsar, upon which special stress will be laid.

Translation, with questions, from a prescribed portion of Virgil's Æneid.

The marks assigned for the translation from prescribed authors shall not be more than twenty-five per cent. of the total marks assigned to the Latin papers.

Questions on Latin accidence.

Translation into Latin of English sentences involving a knowledge of the following principles of Latin syntax: The common uses of the cases; the accusative with the infinitive; the subjunctive in simple sentences; final and result clauses; the law of the sequence of tenses; the indirect question; verbs of fearing, doubting and hindering; the use of the participle, gerund and gerundive, active and passive periphrastic; indirect discourse; and the common forms of the conditional sentence.

The vocabulary will be taken from the prescribed portion of Cæsar and special stress will be laid upon this part of the examination.

Examination upon a short prescribed portion of Cæsar, to test the candidate's knowledge of Latin syntax and his power of idiomatic translation.

The following are the texts prescribed:—

1920, 1921: Cæsar, De Bello Gallico, Book IV., chaps. 20-38, and Book V., chaps. 1-23; Virgil, Æneid, Book II., vv. 1-505.

1922: Cæsar, De Bello Gallico, Book IV., chaps. 20-38, and Book V., chaps. 1-23; Virgil, Æneid, Book I., vv. 1-510.

Two papers will be set: (1) Translation at sight, Virgil, and accidence. (2) Translation into Latin, syntax and idiomatic translation from prescribed Cæsar, etc.

English.

COMPOSITION: An essay on one of several themes set by the examiners. In order to pass in this subject, legible writing, correct spelling and punctuation, and idiomatic and grammatical construction of sentences are indispensable. The candidate should also give attention to the structure of the whole essay, the effective ordering of the thought, and the accurate employment of a good English vocabulary, About two pages of foolscap is suggested as the proper length for the essay; but quality, not quantity, will be mainly regarded.

One examination paper.

LITERATURE: Such questions only will be set as may serve to test the candidate's familiarity with, and intelligent and appreciative comprehension of, the prescribed texts. The candidate will be expected to have memorized the passages prescribed below. In addition to the questions on the prescribed selections, others will be set on a "sight passage" to test the candidate's ability to interpret literature for himself.

The candidate shall produce satisfactory proof, by the certificate of the principal of the school from which he comes or otherwise, that he has read carefully, during the preceding year, at least four suitable works in English literature (both prose and poetry) in addition to those prescribed below for examination.

One examination paper.

1920: Tennyson, The Lady of Shalott, St. Agnes' Eve, "Come not when I am dead," "Break, break, break," In the Valley of Cauteretz, In Memoriam, XXXI, XXXII, XXXVI, LXXV, LXXVI, C, CXI; Browning, "All service ranks the same with God," The Italian in England, Cavalier Tunes, My Last Duchess, The Boy and the Angel, Home Thoughts from Abroad, Up at a Villa, The Guardian Angel, Prospice; Matthew Arnold, Sohrab and Rustum; Shakespeare, Macbeth.

Passages for memorization: Tennyson, The Lady of Shalott, Part I, St. Agnes' Eve, "Break, break, break", In the Valley of Cauteretz. Browning, "All service ranks the same with God", Home Thoughts from Abroad, Prospice.

MACBETH.

Act I, Sc. 5, ll. 16-31.	LADY M.	Glamis thou art . . . crown'd withal.
Act I, Sc. 7, ll. 1-28.	MACB.	If it were done . . . on the other.
Act II, Sc. 1, ll. 33-64.	MACB.	Is this a dagger . . . to hell.
Act III, Sc. 2, ll. 4-26.	LADY M.	Nought's had . . . him further.
Act III, Sc. 2, ll. 45-56.	MACB.	Be innocent . . . go with me.
Act V, Sc. 3, ll. 22-28.	MACB.	I have lived . . . dare not.
Act V, Sc. 3, ll. 39-45.	MACB.	Cure her . . . the heart?
Act V, Sc. 5, ll. 16-28.	SEY.	The Queen . . . signifying nothing.

1921: Wordsworth, Michael, Influence of Natural Objects, Nutting, Elegiac Stanzas, To the Rev. Dr. Wordsworth, To the Cuckoo, "Bright flower, whose home," and the following eight sonnets: "It is not to be thought of," "Dark and more dark the shades of evening fell", "O friend I know not", "Milton, thou shouldst", "Surprised by joy—impatient as the wind", "Hail twilight, sovereign of our peaceful hour", "I thought of Thee, my partner and my guide", "Such age, how beautiful"; Tennyson, The Epic and Morte d'Arthur, Œnone, The Brook, and the following sections of "In Memoriam"; XXVII, LXIV, LXXXIII, LXXXVI, CI, CXIV, CXV, CXVIII, CXXIII; Shakespeare, Merchant of Venice.

Passages for memorization: Wordsworth: "To the Cuckoo"; "It is not to be thought of"; "O friend, I know not"; "Milton, thou shouldst"; "Hail twilight, sovereign of our peaceful hour"; "I thought of Thee, my partner and my guide".

Tennyson: "Morte d'Arthur, ll. 246-255; Œnone, ll. 1-15, ll. 144-150. The lyric stanzas in the "Brook"; "In Memoriam": LXIV, LXXXIII, LXXXVI, CI, CXV, CXVIII.

Shakespeare—The Merchant of Venice:—

Act I, Sc. 1, ll. 79- 99.	Let me play . . . their brothers fools.
Act II, Sc. 9, ll. 36- 49.	Who chooseth me . . . to be new varnished.
Act IV, Sc. 1, ll. 184-205.	The quality of mercy . . . the deeds of mercy.
Act V, Sc. 1, ll. 54- 65.	How sweet the moonlight . . . cannot hear it.
Act V, Sc. 1, ll. 102-108.	The crow doth sing . . . true proportion.

1922: Coleridge, The Ancient Mariner; Tennyson, Lotos Eaters, Ulysses, "Of old sat Freedom," Locksley Hall, Songs from The Princess, Ode on the Duke of Wellington, Charge of the Light Brigade, Enoch Arden; Shakespeare, Julius Cæsar.

Passages for memorization: Coleridge, The Ancient Mariner, ll. 354-372; "Around, around . . . singeth a quiet tune", ll. 599-617; "O Wedding-guest . . . made and loveth all"; Tennyson, The Lotos Eaters, ll. 10-28, §§ I, III, of the Choric Song, Ulysses, ll. 18-32, ll. 44-61, "Of Old Sat Freedom", "Sweet and low", "The Splendour falls", Charge of the Light Brigade.

Shakespeare—Julius Caesar:—

Act	I, Sc. 1, ll. 40- 60.	O you hard hearts . . . on this ingratitude.
Act	III, Sc. 1, ll. 148-163.	O mighty Caesar . . . spirits of this age.
Act	III, Sc. 2, ll. 173-196.	If you have tears . . . flourished over us.
Act	IV, Sc. 2, ll. 19- 27.	Thou hast described . . . in the trial.
Act	V, Sc. 5, ll. 68- 75.	This was the noblest . . . was a man.

French.

The candidate's knowledge of French will be tested by: (1) simple questions on grammar; (2) the translation of simple passages from English into French; (3) translation at sight of easy passages from modern French, and (4) an examination on the following texts:—

The texts contained in the New High School French Reader.

1920: Bazin, Six Contes (Oxford Junior French Series).

1921: Labiche, La Grammaire; Souvestre, Le Serf.

Two papers will be set: (1) Prescribed texts and translation at sight; questions on grammar; (2) the translation of English into French.

German.

The candidate's knowledge of German will be tested by: (1) simple questions on grammar; (2) the translation of simple passages from English into German; (3) translation at sight of easy passages from modern German; and (4) an examination on the following texts:—

The texts contained in the New High School German Reader with the exception of Von Fallensleben, Deutschland über Alles.

1920: Hauff, Das kalte Herz.

1921: Benedix, Eigensinn; Seidel, Der Unsichtbare.

Two papers will be set: (1) Prescribed texts and translation at sight; questions on grammar; (2) the translation of English into German.

History.

BRITISH HISTORY.—Great Britain and Canada from 1763 to 1885. The geography relating to the history prescribed. One examination paper.

This paper will include optional questions on the causes of the present war, the interests at stake, and the relations of the different nations directly or indirectly concerned.

ANCIENT HISTORY.—General outlines of the History of Greece to the death of Alexander and of the history of Rome to the death of Augustus, with a brief outline of the art, literature, philosophy, and social life of the Greeks and Romans. The geography relating to the history prescribed. One examination paper.

Mathematics.

ALGEBRA.—Elementary rules; highest common measure; lowest common multiple; fractions; square root; simple equations of one, two and three unknown quantities; indices; surds, quadratics of one and two unknown quantities.

One examination paper.

GEOMETRY.—A.—CONSTRUCTIONS.

To construct a triangle with sides of given lengths.

To construct an angle equal to a given rectilineal angle.

To bisect a given angle.

To bisect a given straight line.

To draw a line perpendicular to a given line from a given point in it.

To draw a line perpendicular to a given line from a given point not in the line.

Locus of a point equidistant from two given lines.

Locus of a point equidistant from two given points.

To draw a line parallel to another, through a given point.

To divide a given line into any number of equal parts.

To describe a parallelogram equal to a given triangle, and having an angle equal to a given angle.

To describe a parallelogram equal to a given rectilineal figure, and having an angle equal to a given angle.

On a given straight line to describe a parallelogram equal to a given triangle, and having an angle equal to a given angle.

To find the centre of a given circle.

From a given point to draw a tangent to a given circle.

On a given straight line to construct a segment of a circle containing an angle equal to a given angle.

From a given circle to cut off a segment containing an angle equal to a given angle.

In a circle to inscribe a triangle equiangular to a given triangle.

To find locus of centres of circles touching two given lines.

To inscribe a circle in a given triangle.

To describe a circle touching three given straight lines.

To describe a circle about a given triangle.

About a given circle to describe a triangle equiangular to a given triangle.

To divide a given line similarly to another given divided line.

To find the fourth proportional to three given lines.

To describe a polygon similar to a given polygon, and with the corresponding sides in a given ratio.

To find the mean proportional between two given straight lines.

To construct a polygon similar to a given polygon, and such that their areas are in a given ratio.

To describe a polygon of a given shape and size.

B.—THEOREMS.

The sum of the angles of any triangle is equal to two right angles.

The angles at the base of an isosceles triangle are equal, with converse.

If the three sides of one triangle be equal, respectively, to the three sides of another, the triangles are equal in all respects.

If two sides and the included angle of one triangle be equal to two sides and the included angle of another triangle, the triangles are equal in all respects.

If two angles and one side of a triangle be equal to two angles and the corresponding side of another, the triangles are equal in all respects.

If two sides and an angle opposite one of these sides be equal, respectively, in two triangles, the angles opposite the other pair of equal sides are either equal or supplemental.

The sum of the exterior angles of a polygon is four right angles.

The greater side of any triangle has the greater angle opposite it.

The greater angle of any triangle has the greater side opposite it.

If two sides of one triangle be equal respectively to two sides of another, that with the greater contained angle has the greater base, with converse.

If a transversal fall on two parallel lines, relations between angles formed, with converse.

Lines which join equal and parallel lines towards the same parts are themselves equal and parallel.

The opposite sides and angles of a parallelogram are equal and the diagonal bisects it.

Parallelograms on the same base, or on equal bases, and between the same parallels are equal.

Triangles on the same base, or on equal bases, and between the same parallels are equal.

Triangles equal in area, and on the same base, are between the same parallels.

If a parallelogram and a triangle be on the same base, and between the same parallels, the parallelogram is double the triangle.

Expressions for area of a parallelogram, and the area of a triangle.

The complements of parallelograms about the diagonal of any parallelogram are equal.

The square on the hypotenuse of a right-angled triangle is equal to the sum of the squares on the sides.

If a straight line be divided into any two parts, the sum of the squares on the parts, together with twice the rectangle contained by the parts, is equal to the square on the whole line.

The square on a side of any triangle is equal to the sum of the squares on the two other sides+ twice the rectangle contained by either of these sides and the projection of the other side on it.

If more than two equal straight lines can be drawn from the circumference of a circle to a point within it, that point is the centre.

The diameter is the greatest chord in a circle, and a chord nearer the centre is greater than one more remote. Also the greater chord is nearer the centre than the less.

The angle at the centre of a circle is double the angle at the circumference on the same arc.

The angles in the same segment of a circle are equal, with converse.

The opposite angles of a quadrilateral inscribed in a circle are together equal to two right angles, with converse.

The angle in a semicircle is a right angle; in a segment greater than a emicircle less than a right angle; in a segment less than a semicircle greater than a right angle.

A tangent is perpendicular to the radius to the point of contact; only one tangent can be drawn at a given point; the perpendicular to the tangent at the point of contact passes through the centre; the perpendicular from centre on tangent passes through the point of contact.

If two circles touch, the line joining the centres passes through the point of contact.

The angles which a chord drawn from the point of contact makes with the tangent, are equal to the angles in the alternate segments.

The rectangles under the segments of intersecting chords are equal.

If $OA.OB = OC^2$, OC is a tangent to the circle through A, B, and C.

Triangles of the same altitude are as their bases.

A line parallel to the base of a triangle divides the sides proportionally, with converse.

If a vertical angle of a triangle be bisected, the bisector divides the base into segments that are as the sides, with converse.

The analogous proposition when the exterior angle at the vertex is bisected, with converse.

If two triangles are equiangular, the sides are proportional.

If the sides of two triangles are proportional, the triangles are equiangular.

If the sides of two triangles about equal angles are proportional, the triangles are equiangular.

If two triangles have an angle in each equal, and the sides about two other angles proportional, the remaining angles are equal or supplemental.

Similar triangles are as the squares on corresponding sides.

The perpendicular from the right angle of a right-angled triangle on the hypotenuse divides the triangle into two which are similar to the original triangle.

In equal circles angles, whether at the centres or circumferences, are proportional to the arcs on which they stand.

The areas of two similar polygons are as the squares on corresponding sides.

If three lines be proportional, the first is to the third as the figure on the first to a similar figure on the second.

Questions and easy deductions on the preceding constructions and theorems.

It is recommended that the study of formal demonstrative Geometry be preceded by a course in Practical Geometry, extending over not more than a year, and embracing the following:—

Definitions: fundamental geometric conceptions and principles; use of simple instruments, as compasses, protractor, graduated rule, etc.; measurement of lines and angles, and construction of lines and angles of given numerical magnitude; accurate construction of figures; some leading propositions in plane geometry reached by induction as a result of accurate construction of figures; deduction also employed as principles are reached and assured. At the examination, questions may be given in Practical Geometry, the constructions being such as naturally spring from the prescribed course. Candidates must provide themselves with a graduated ruler, compasses, set-square and protractor.

In the formal deductive Geometry modifications of Euclid's treatment of the subject will be allowed, though not required, as follows:—

The employment of the "hypothetical construction".

The free employment of the method of superposition including the rotation of figures about an axis, or about a point in a plane.

A modification of Euclid's parallel postulate.

A treatment of ratio and proportion restricted to the case in which the compared magnitudes are commensurable.

One examination paper.

Experimental Science.

Chemistry:—An experimental study of the following elements and their more important compounds: hydrogen, oxygen, sulphur, sodium, potassium, nitrogen, chlorine, bromine, iodine, carbon, calcium. The course of work should be arranged so as to give the pupils a knowledge of the following: Mixtures, solutions, compounds, and elements, and their various properties and reactions; acids, bases, and salts. Fundamental laws and principles, as: conservation of mass, definite proportions, multiple proportions, valency, proportions by volume in which gases react. The quantitative meaning and use of chemical symbols, formulae and equations. Chemical nomenclature. Simple quantitative experiments and problems. The application of chemistry to the industries, illustrated by an account of the commercial manufacture and use of some of the more important substances included in this course.

Physics.—A course defined as follows, the topics to be presented experimentally with mathematical applications simple and direct in character.

SOUND.—Vibratory motion illustrated with pendulums, rods, strings, membranes, and plates.

Types of wave motion illustrated by water waves, waves in a cord, and waves in a coiled spring.

Production, propagation, velocity, and reflection of sound waves; wave lengths.

Intensity, pitch.

Laws of vibration of strings; vibration of air in organ pipes; nodes and loops in vibrating strings, and in vibrating air columns, harmonies, quality, manometric flames.

Interference phenomena; beats.

Resonance.

HEAT.—Sources of heat: Transformation of other forms of energy into heat energy.

Expansion due to heat: Anomalous expansion of water and its significance; expansion of gases; Charles' Law.

Temperature and thermometers: Construction and graduation of Centigrade and Fahrenheit thermometers; measurement of temperature on absolute scale.

Quantity of heat: Temperature as contrasted with quantity of heat; heat units; specific heat; determination of the specific heat of a solid and of a liquid.

Fusion: Determination of melting point of ice; heat changes in solution; determination of heat of fusion of ice.

Vaporization: Determination of heat of vaporization of water; dependence of boiling point on pressure and on the presence of salts in solution; evaporation; practical applications of cooling by vaporization; ice machine.

Transference of heat: Conduction and convection, as illustrated in systems of heating by hot water and by steam; ventilation; radiation; radiant energy; effect of temperature and nature of surface; emission and absorption; selective absorption.

The transformation of heat energy into the energy of mechanical motion as exemplified in the steam engine and in the gas engine.

Heat in connection with meteorology; clouds; rain; winds; dew; frost; dew point; hygrometers (Regnault's and the wet and dry bulb hygrometer).

Nature of heat: Kinetic theory.

LIGHT.—Propagation: Wave theory of light; rectilinear propagation, image through a pin-hole; photometry, shadow and grease-spot photometers.

Reflection: Laws of reflection; images in plane mirrors; images in spherical mirrors, drawing image of object in any position.

Refraction: Laws of refraction; index of refraction, its measurement, and its relation to the velocities of light in media; total reflection.

Lenses: Converging and diverging; determination of focal length; conjugate foci; drawing of images produced by lenses; vision through a lens, relation of the size of the image to the size of the object.

Optical instruments: Simple microscope; camera; projection lantern.

Colour: Decomposition and recomposition of white light; spectrum; complementary colours; rainbow.

MAGNETISM AND ELECTRICITY.—Magnetism: Laws of magnetic attraction and repulsion; magnetic field, magnetic lines of force; magnetism by induction; magnetization; molecular theory of magnetization; magnetic permeability, terrestrial magnetism; mariner's compass, inclination and declination of the magnetic needle.

Electricity at rest: Two kinds of electrification; conductors and non-conductors; gold-leaf electroscope; induced electrification; electricity at points and at surfaces; lightning rods; the Leyden jar; simple notions of electrical potential.

Electric current: Production of electric current by voltaic cells; electromotive force of a voltaic cell; detection of the electric current; polarization and local action; simple notions of the relation of electromotive force, current strength, and resistance, names of units; Leclanche cell, dry cell, Daniell cell.

Effects of the electric current: Electrolysis, theory of electrolysis, electroplating, electrotyping, storage cell, laws of electrolysis, measurement of current strength by electrolysis; magnetic effects, electromagnet, relation between the direction of the current and the polarity of an electromagnet, the electric telegraph, the electric bell, the galvanometer, the D.C. motor; heating effects of the current, practical applications, electric stoves, electric irons, electric heaters, electric welding; incandescent and arc lamps.

Induced currents: Production of induced currents; laws of induced currents; Lenz's Law; the transformer; the induction coil; the telephone; a simple type of the A.C. and of the D.C. dynamo. Reasons for the use of the A.C. current; differences in the uses of the A.C. and D.C. current; distribution of electricity as illustrated by the Hydro-Electric System.

Electric measurements: Units of current strength, resistance, and electromotive force; Ohm's Law; measurement of current strength, the ammeter; measurement of electromotive force, the voltmeter; measurement of resistance, the Wheatstone Bridge.

Special forms of radiation: Electric waves, wireless telegraphy.

FOR HONOURS.

Greek.

Translation into English of passages from the prescribed texts, with questions thereon.

Translation at sight of prose passages of average difficulty from Xenophon's historical works.

Translation into Greek of sentences (based upon Xenophon's vocabulary) to test the candidate's scholarship in matters of accidence, syntax and phraseology.

The following are the prescribed texts:—

1920, 1921, 1922: Xenophon, Hellenica (Philpotts' Selections, sections I. and II.), Homer, Iliad I., 1-350; III., 121-244; VI., 66-118, and 237 to the end; Odyssey VI. and IX.

Two papers will be set: (1) prescribed texts; (2) translation at sight and Greek prose composition.

Latin.

Translation into English of passages from prescribed texts, with grammatical questions on these passages and such other questions as arise naturally from the context.

Translation at sight of a passage of average difficulty from Caesar.

Translation into Latin of English sentences to illustrate Latin syntax, and of a continuous passage of English narrative similar to Caesar.

The following are the prescribed texts:—

1920: Caesar, De Bello Gallico, Book V.; Cicero, Pro Lege Manilia, Virgil, Aeneid, Book X., 1-509.

Horace, Odes as follows: Book III., 1, 2, 8, 9, 13, 18, 21, 23, 29, 30; Book IV., 3, 5, 7, 12, 15.

1921: Caesar, De Bello Gallico, Book V.; Cicero, Pro Lege Manilia; Virgil, Aeneid, Book IX., 1-449.

Horace, Odes as follows: Book I., 1, 2, 4, 5, 9, 10, 14, 22, 24, 31, 38; Book II., 3, 10, 14, 15, 16, 17, 18, 20.

1922: Caesar, De Bello Gallico, Book V.; Cicero, In Catilinam I. and III.; Virgil, Aeneid, Book X., 1-509.

Horace, Odes as follows: Book III., 1, 2, 8, 9, 13, 18, 21, 23, 29, 30; Book IV., 3, 5, 7, 12, 15.

Two examination papers

(1) Latin Prose Composition and Caesar.

(2) Cicero, Horace, Virgil, and Sight Translation.

English.

COMPOSITION: An essay on one of several themes set by the examiners.

One examination paper.

LITERATURE: The candidate will be expected to have memorized some of the finest passages. Besides questions to test the candidate's familiarity with, and comprehension of, the following selections, questions may also be set to determine within reasonable limits his power of appreciating literary art.

The candidate shall produce satisfactory proof by the certificate of the principal of the school from which he comes or otherwise that he has read carefully, during the preceding year, at least four suitable works in English literature (both prose and poetry) in addition to those prescribed below for examination.

One examination paper.

1920: Tennyson, The Lady of Shalott, St. Agnes' Eve, "Come not when I am dead," "Break, break, break," In the Valley of Cauteretz, In Memoriam, XXXI, XXXII, XXXVI, LXXV, LXXVI, C, CXI; Browning, My Last Duchess, "All service ranks the same with God," The Italian in England, Cavalier Tunes, The Boy and the Angel, Home Thoughts from Abroad, Up at a Villa, Love among the Ruins, The Guardian Angel, Prospice; Matthew Arnold, Sohrab and Rustum; Shakespeare, Macbeth, As You Like It.

Passages for memorization:—

Tennyson: St. Agnes' Eve, "Break, break, break"; In the Valley of Cauteretz. Browning: "All service ranks the same with God"; Home Thoughts from Abroad; Prospice.

Shakespeare—Macbeth:—

Act I, Sc. 5, ll. 16-31.	LADY M.	Glamis thou art . . . crown'd withal.
Act I, Sc. 7, ll. 1-28.	MACB.	If it were done . . . on the other.
Act II, Sc. 1, ll. 33-64.	MACB.	Is this a dagger . . . to hell.
Act III, Sc. 2, ll. 4-26.	LADY M.	Nought's had . . . him further.
Act III, Sc. 2, ll. 45-56.	MACB.	Be innocent . . . go with me.
Act V, Sc. 3, ll. 22-28.	MACB.	I have lived . . . dare not.
Act V, Sc. 3, ll. 39-45.	MACB.	Cure her . . . the heart?
Act V, Sc. 5, ll. 16-28.	SEY.	The Queen . . . signifying nothing.

Shakespeare—As You Like It:—

Act II, Sc. 1, ll. 1- 18.	DUKE S.	Now, my co-mates . . . change it.
Act II, Sc. 5.		The Songs.
Act II, Sc. 7, ll. 139-166.	JAQ.	All the world's . . . sans everything.
Act II, Sc. 7, ll. 174-190.	AMIENS.	The Song.

1921: Wordsworth, Michael, Influence of Natural Objects, Nutting Elegiac Stanzas, To the Rev. Dr. Wordsworth, To the Cuckoo, "Bright flower, whose home," and the following eight sonnets: "It is not to be thought of," "Dark and more dark the shades of evening fell", "O friend I know not", "Milton, thou shouldst", "Surprised by joy—impatient as the wind", "Hail twilight, sovereign of our peaceful hour", "I thought of Thee, my partner and my guide", "Such age, how beautiful"; Tennyson, The Epic and Morte d'Arthur, Œnone, The Brook, and the following sections of "In Memoriam"; XXVII, LXIV, LXXXIII, LXXXVI, CI, CXIV, CXV, CXVIII, CXXIII; Shakespeare, Merchant of Venice, Henry IV, Part 1.

Passages for memorization: Wordsworth: "To the Cuckoo"; "It is not to be thought of"; "O friend, I know not"; "Milton, thou shouldst"; "Hail twilight, sovereign of our peaceful hour"; "I thought of Thee, my partner and my guide".

Tennyson: "Morte d'Arthur, ll. 246-255; Œnone, ll. 1-15, ll. 144-150, The lyric stanzas in the "Brook"; "In Memoriam": LXIV, LXXXIII, LXXXVI, CI, CXV, CXVIII.

Shakespeare—The Merchant of Venice:—

Act I, Sc. 1, ll. 79- 99.	Let me play . . .	their brothers fools.
Act II, Sc. 9, ll. 36- 49.	Who chooseth me . . .	to be new varnished.
Act IV, Sc. 1, ll. 184-205.	The quality of mercy . . .	the deeds of mercy.
Act V, Sc. 1, ll. 54- 65.	How sweet the moonlight . . .	cannot hear it.
Act V, Sc. 1, ll. 102-108.	The crow doth sing . . .	true proportion.

1922: Coleridge, The Ancient Mariner; Tennyson, Lotos Eaters, Ulysses, "Of old sat Freedom," Locksley Hall, Songs from the Princess, Ode on the Duke of Wellington, Charge of the Light Brigade, Enoch Arden; Shakespeare, Julius Cæsar, Midsummer Night's Dream.

Passages for memorization: Coleridge, The Ancient Mariner, ll. 354-372, "Around, around . . . singeth a quiet tune", ll. 599-617, O Wedding-guest . . . made and loveth all"; Tennyson, The Lotos Eaters, ll. 10-28,§§ I, III, of the Choric Song, Ulysses, ll. 18-32, ll. 44-61, "Of Old Sat Freedom", "Sweet and low", "The Splendour falls", Charge of the Light Brigade.

Shakespeare—Julius Caesar:—

Act I, Sc. 1, ll. 40- 60.	O you hard hearts . . .	on this ingratitude.
Act III, Sc. 1, ll. 148-163.	O mighty Caesar . . .	spirits of this age.
Act III, Sc. 2, ll. 173-196.	If you have tears . . .	flourished over us.
Act IV, Sc. 2, ll. 19- 27.	Thou hast described . . .	in the trial.
Act V, Sc. 5, ll. 68- 75.	This was the noblest . . .	was a man.

French.

The prescription of work in grammar, the translation of English into French and sight translation, is the same for honours as for pass, but the examination will be of a more advanced character.

The following are the prescribed texts:—

1920: Erckmann-Chatrian, Histoire d'un homme du peuple (Oxford Modern French Texts).

1921: Sandeau; Mademoiselle de la Seiglière; About, L'homme à l'oreille cassée.

German.

The prescription of work in grammar, the translation of English into German and sight translation, is the same for honours as for pass, but the examination will be of a more advanced character.

The following are the prescribed texts:—

1920: Moser, Der Bibliothekar, Heyse, L'Arrabbiata.

1921: Schiller, Der Neffe als Onkel; Storm, Pole Poppenspäler.

History.

Outline of Mediæval History from the Barbarian Invasion to the Discovery of America. Study in greater detail of the period from the Discovery of America to the death of Queen Elizabeth, 1492-1603. The geography relating to the history prescribed. One examination paper.

Outlines of Modern History from the death of Queen Elizabeth to the Treaty of Paris, 1603-1763. Study of Modern History in detail, 1763-1885. The geography relating to the history prescribed. One examination paper.

These papers will include optional questions on the causes of the present war, the interests at stake and the relations of the different nations directly or indirectly concerned.

Mathematics.

ALGEBRA: Elementary rules; highest common measure; lowest common multiple; fractions; square root; simple equations of one, two and three unknown quantities; indices, surds, quadratics of one and two unknown quantities; theory of divisors; ratio, proportion and variation; progressions; notation; permutations and combinations, binomial theorem; interest forms; annuities.

One examination paper.

TRIGONOMETRY.—Trigonometrical ratios with their relations to each other; sines, etc., of the sum and difference of angles with deduced formulas; use of logarithms; solution of triangles; expressions for the area of triangles; radii of circumscribed, inscribed and escribed circles.

One examination paper.

PROBLEMS: One paper.

GEOMETRY: A.—Exercises on the course prescribed for the pass examination, with special reference to the following topics:—loci; maxima and minima; the system of inscribed, escribed and circumscribed circles of a triangle, with metrical relations; radical axis.

B.—The following additional propositions in Synthetic Geometry, with exercises thereon:—

To divide a given straight line internally and externally in medial section.

To describe a square that shall be equal to a given rectilineal figure.

To describe an isoceles triangle having each of the angles at the base double of the third angle.

To inscribe a regular pentagon in a given circle.

The squares on two sides of a triangle are together equal to twice the square on half the third side and twice the square on the median to that side.

If ABC be a triangle, and A be joined to a point P of the base such that BP: PC = m : n, then $nAB^2+mAC^2=(m+n)\,AP^2+nBP^2+mPC^2$.

In a right-angled triangle the rectilineal figure described on the hypotenuse is equal to the sum of the similar and similarly described figures on the two other sides.

If the vertical angle of a triangle be bisected by a straight line which also cuts the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the segments of the base, together with the square on the straight line which bisects the angle.

If from the vertical angle of a triangle a straight line be drawn perpendicular to the base, the rectangle contained by the sides of the triangle is equal to the rectangle contained by the perpendicular and the diameter of the circle described about the triangle.

The rectangle contained by the diagonals of a quadrilateral inscribed in a circle is equal to the sum of the two rectangles contained by its opposite sides.

Two similar polygons may be so placed that the lines adjoining corresponding points are concurrent.

If a straight line meet the sides BC, CA, AB, of a triangle ABC in D, E, F, respectively, then BD, CE, AF = DC, EA, FB, and conversely. (Menelaus' Theorem.)

If straight lines through the angular points A, B, C of a triangle are concurrent, and intersect the opposite sides in D, E, F, respectively, then BD, CE, AF = DC, EA, FB, and conversely. (Ceva's Theorem.)

If a point A lie on the polar of a point B with respect to a circle, then B lies on polar of A.

Any straight line which passes through a fixed point is cut harmonically by the point, any circle, and the polar of the point with respect to the circle.

In a complete quadrilateral each diagonal is divided harmonically by the two other diagonals, and at the angular points through which it passes.

C.—ELEMENTARY ANALYTICAL GEOMETRY: Axes of co-ordinates. Position of a point in plane of reference.

Transformation of co-ordinates,—origin changed, or axes (rectangular) turned through a given angle.

$\pm 2A = x_1(y_2 - y_3) + \ldots + \ldots$

Co-ordinates of point dividing line joining $P_1(x_1, y_1)$ and $P_2(x_2, y_2)$ in ratio $m:n$ are $x = \dfrac{m x_2 + n x_1}{m + n}$, $y = \dfrac{m y_2 + n y_1}{m + n}$

$(P_1 P_2)^2 = (x_1 - x_2)^2 + (y_1 - y_2)^2$

Equations of straight lines.

$$\left.\begin{array}{l} \dfrac{x - x_1}{x_1 - x_2} = \dfrac{y - y_1}{y_1 - y_2} \\ \dfrac{x}{a} + \dfrac{y}{b} = 1. \end{array}\right\} \text{Line defined by two points through which it passes.}$$

$$\left.\begin{array}{l} \dfrac{x - a}{\cos\theta} = \dfrac{y - b}{\sin\theta} = r. \\ y = mx + b. \\ y = m(x - a). \\ x\cos\alpha + y\sin\alpha = p. \end{array}\right\} \text{Line defined by one point through which it passes, and by its direction.}$$

General equation of 1st degree, $Ax + By + C = 0$, represents a straight line.

Any line through (x_1, y_1) is $A(x - x_1) + B(y - y_1) = 0$.

If θ be angle between $Ax + By + C = 0$ and $A'x + B'y + C' = 0$, then

$$\tan\theta = \frac{A'B - AB'}{AA' + BB'}$$

Condition of $\perp$rity, $AA' + BB' = 0$.

Condition of $\parallel$ism, $\dfrac{A}{A'} = \dfrac{B}{B'}$.

Distance from (a,b) to $Ax + By + C = 0$, in direction whose direction cosines are (l, m) is $= \dfrac{Aa + Bb + C}{Al + Bm}$.

$\perp$ distance from (a, b) on $Ax + By + C = 0$.

$$= \pm \frac{Aa + Bb + C}{\sqrt{A^2 + B^2}}$$

THE CIRCLE—

Equations in forms: $x^2 + y^2 = r^2$

$$(x - a)^2 + (y - b)^2 = r^2$$

$$x^2 + y^2 - 2rx = 0.$$

General equation $x^2 + y^2 + 2Ax + 2By + C = 0$,

or $(x + A)^2 + (y + B)^2 = A^2 + B^2 - C$,

represents a circle with centre $(-A, -B,)$ and radius $\sqrt{A^2 + B^2 - C}$.

Tangent at (x', y') to $x^2 + y^2 = r^2$, is $xx' + yy' = r^2$.

Normal is $\frac{x}{x'} = \frac{y}{y'}$.

Tangent in form $y = mx \pm r\sqrt{1 + m^2}$.

Pole being (x', y'), polar is $xx' + yy' = r^2$.

If pole move along a line, polar turns about pole of that line.

Square of tangent from (x', y') to $x^2 + y^2 + 2Ax + 2By + C = 0$ is $x'^2 + y'^2 + 2Ax' + 2By' + C$.

Radical axis of $x^2 + y^2 + 2Ax + 2By + C = 0$,

$$x^2 + y^2 + 2A'x + 2B'y + C' = 0.$$

Easy exercises on the preceding propositions.

One examination paper.

Physics.

A course defined as follows, the topics to be presented experimentally with mathematical applications simple and direct in character:

MECHANICS OF SOLIDS.—Metric and English units of length. Use of vernier calipers, screw-gauge, in measurement of wires, cylinders, spheres, plates, etc.

Unit of time.

Motion: velocity, uniform and variable; average velocity; velocity at a point.

Newton's first law of motion, force, inertia, and mass; metric and English units of mass.

Acceleration, measurement of uniform acceleration, acceleration due to gravity, value of gravity.

Momentum; Newton's second law; measurement of force; metric and English absolute and gravitational units of force.

Newton's third law; conservation of momentum; centripetal and centrifugal force with illustrations, centrifuge, cream separator, form of earth, etc.

Composition and resolution of forces; parallelogram of forces; triangle of forces; moments; couples; centre of gravity.

Friction: laws of friction; co-efficient of friction.

Gravitation: Newton's law of gravitation; Cavendish's experiment.

Work: measurement of work in metric and English absolute and gravitational units; energy; measurement of energy; kinetic and potential energy; conservation of energy.

Power: measurement of power; horse power; the watt.

Machines: mechanical advantage; lever; wheel and axle; pulley; inclined plane; screw; wedge; simple combinations of the foregoing.

MECHANICS OF FLUIDS.—Pressure: pressure at a point; Pascal's law; pressure due to gravity; equilibrium of fluids at rest; Archimedes' principle; buoyancy; hydraulic pressure; specific gravity; determination of specific gravity of solids and liquids.

Atmospheric pressure: barometers; weight of air; pressure due to molecular motion; lift and force pumps, siphon; the use of compressed air, airbrakes, air tools.

Velocity due to pressure: Torricelli's theorem; pressure in moving column of fluid varies with the velocity; application to explain the principle of the atomizer, the Bunsen burner, the Bunsen filter pump, forced draught, the curved flight of a ball.

Surface tension: surface force; surface energy; capillarity; practical applications.

TRANSFORMATIONS OF ENERGY.—Mechanical equivalent of heat, measured mechanically and electrically; measurement of electrical energy; the kilowatt hour.

Chemistry.

An experimental course defined as follows: Chemistry of the Middle School reviewed and continued. Reversible reactions. Chemical equilibrium. Rate of reaction and conditions that affect it (including catalysis). A study of the following elements and their most characteristic compounds, having regard to Mendelejeff's classification and to their most important economic and industrial applications, hydrogen, sodium, potassium, magnesium, zinc, calcium, strontium, barium, aluminium, carbon, silicon, tin, lead, nitrogen, phosphorus, arsenic, antimony, bismuth, oxygen, sulphur, fluorine, chlorine, bromine, iodine, iron, copper.

Biology.

ZOOLOGY.—Practical study of the external form of all types, and the dissection or the study of prepared specimens (or models), as specified below. Observational drawings are essential. An elementary knowledge of the chief functions of the body—nutrition, irritability, motility, excretion, reproduction—and of the mode of life and the life history of the various types. Study of the principles of classification in any one group, and recognition of the commonest forms in all.

THE FROG.—Practical study of the external features; skeleton; visceral dissection; central nervous system; action of a typical muscle. Practical study of a cross-section for arrangement of organ systems. Observation of external features of development.

THE FISH.—Practical study of the external form; chief visceral organs; circulation and respiration; comparison with frog as to organs of locomotion, circulation, and respiration.

THE REPTILE.—Practical study of the external form of a snake and a turtle. Comparison with a lizard.

THE BIRD.—Practical study of the external form, plumage, and skeleton of some common bird. Adaptations to flight. Modification of bill and foot, in so far as they are of value in distinguishing the different chief types.

THE MAMMAL.—Practical study of the chief features of the skeleton, the visceral organs, and the chief divisions of the brain of a rabbit or a cat. Major characteristics of mammalian dentition and foot structure, as illustrated by the pig, horse, sheep, rabbit, dog, mole, and bat.

THE WORM.—Practical study of the external features, and dissection of the earth-worm. Study of cross-section for arrangement of chief organ systems only.

THE ARTHROPOD.—Practical study of the external form of the crayfish, including segmentation and appendages. Comparison of the external form of the crayfish, grasshopper (or cricket), millipede, and spider.

THE MOLLUSC.—Practical study of the external form, and mode of locomotion and respiration, of the fresh-water clam; comparison in these respects with the snail.

THE PROTOZOAN.—A practical study of the living amœba or paramœcium.

NOTE.—Dissection of at least the frog and the earth-worm by the pupil will be required. In other cases, prepared specimens or models may be used. Cross-sections will be studied with the low power microscope.

BOTANY.—General types of the great natural groups of plants; classification.

MORPHOLOGY.—Morphology of seed, root, stem, leaf, flower, and fruit. A study of the cellular structure of the leaf and of the relative arrangement of the more important tissues and tissue-systems of the stem and root (as shown by sections) of bean and maize, or of any other typical dicotyledon and monocotyledon.

PHYSIOLOGY.—Practical studies of absorption (osmosis), plasmolysis, transpiration, photosynthesis, respiration, irritability (*e.g.*, heliotropism), growth and movement. An elementary knowledge of the phenomena of fertilization and reproduction.

ECOLOGY.—Modifications of organs for special functions. Seed dispersal. Light relations, Pollination and adaptations for cross-pollination. Plant associations, *e.g.*, mesophytes, hydrophytes, xerophytes.

CRYPTOGAMS.—The practical study of representatives of the chief subdivisions of the cryptogams; spirogyra, chara, a mushroom, a lichen, a liverwort, a moss, a horsetail, a clubmoss, and a fern. Distribution and economic importance of yeasts and bacteria. Microscopic structure of the yeast cell; reproduction by budding. Macroscopic observation of a bacterial colony.

PHANEROGAMS.—The practical study of representatives of the seed plants of the locality, including at least one member of each of the following orders: Coniferae, Carophyllaceae, Ranunculaceae, Cruciferae, Rosac ae, Leguminosae, Sapindaceae, Umbelliferae, Ericaceae, Labiatae, Scrophulariaceae, Borraginaceae, Compositae, Gramineae (so far as the structure of the flower and stem is concerned), Liliaceae.

NOTE.—As form becomes intelligible only in the light of a knowledge of function and adaptation, it is advisable that the physiological and ecological studies should be taken up in appropriate connection with the morphological. It is also to be emphasized that the making of faithful and neat records of observations is a most important adjunct. In many cases these should be expressed as drawings, but it should be borne in mind that drawing loses much of its value as an educative factor unless there be an insistence on absolute accuracy and the careful naming of all the features represented. Judgment should, therefore, be exercised in requiring no more than can be done well.

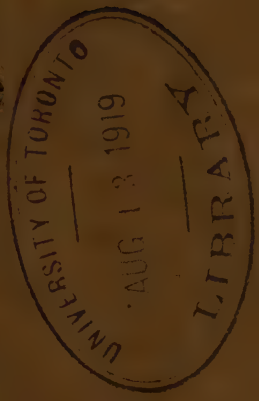
THE

CALENDAR

OF THE

University of Toronto

University College
Victoria College
Trinity College
St. Michael's College



FACULTY OF ARTS

1919-1920

UNIVERSITY OF TORONTO PRESS

THE

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OF THE

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University College
Victoria College
Trinity College
St. Michael's College

FACULTY OF ARTS

1919-1920

UNIVERSITY OF TORONTO PRESS

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Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

FEBRUARY						
Sun.	. 2	9	16	23	..	
Mon.	. 3	10	17	24	..	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	..	..

MARCH						
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APRIL						
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MAY						
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JUNE						
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Sat.	. 7	14	21	28	..	

JULY						
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Thur.	. 3	10	17	24	31	
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Sat.	. 5	12	19	26	..	

AUGUST						
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Thur.	. 7	14	21	28	..	
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SEPTEMBER						
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Thur.	. 4	11	18	25	..	
Fri.	. 5	12	19	26	..	
Sat.	. 6	13	20	27	..	

OCTOBER						
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Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

NOVEMBER						
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Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	29	..

DECEMBER						
Sun.	. .	7	14	21	28	
Mon.	. 1	8	15	22	29	
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Thur.	. 4	11	18	25	..	
Fri.	. 5	12	19	26	..	
Sat.	. 6	13	20	27	..	

1920 CALENDAR 1920

JANUARY						
Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. .	2	9	16	23	30
Sat.	. 3	10	17	24	31	

FEBRUARY						
Sun.	. 1	8	15	22	29	
Mon.	. 2	9	16	23	..	
Tues.	. 3	10	17	24	..	
Wed.	. 4	11	18	25	..	
Thur.	. 5	12	19	26	..	
Fri.	. .	6	13	20	27	..
Sat.	. 7	14	21	28	..	

MARCH						
Sun.	. .	7	14	21	28	
Mon.	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	31	
Thur.	. 4	11	18	25	..	
Fri.	. .	5	12	19	26	..
Sat.	. 6	13	20	27	..	

APRIL						
Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. .	2	9	16	23	30
Sat.	. 3	10	17	24	..	

MAY						
Sun.	. 2	9	16	23	30	
Mon.	. 3	10	17	24	31	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. .	7	14	21	28	..
Sat.	1	8	15	22	29	..

JUNE						
Sun.	. .	6	13	20	27	
Mon.	. .	7	14	21	28	
Tues.	. 1	8	15	22	29	
Wed.	. 2	9	16	23	30	
Thur.	. 3	10	17	24	..	
Fri.	. .	4	11	18	25	..
Sat.	. 5	12	19	26	..	

JULY						
Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. .	2	9	16	23	30
Sat.	. 3	10	17	24	31	

AUGUST						
Sun.	. 1	8	15	22	29	
Mon.	. 2	9	16	23	30	
Tues.	. 3	10	17	24	31	
Wed.	. 4	11	18	25	..	
Thur.	. 5	12	19	26	..	
Fri.	. .	6	13	20	27	..
Sat.	. 7	14	21	28	..	

SEPTEMBER						
Sun.	. .	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. .	3	10	17	24	..
Sat.	. 4	11	18	25	..	

OCTOBER						
Sun.	. 3	10	17	24	31	
Mon.	. 4	11	18	25	..	
Tues.	. 5	12	19	26	..	
Wed.	. 6	13	20	27	..	
Thur.	. 7	14	21	28	..	
Fri.	. 1	8	15	22	29	..
Sat.	2	9	16	23	30	..

NOVEMBER						
Sun.	. .	7	14	21	28	
Mon	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	..	
Thur.	. 4	11	18	25	..	
Fri.	. .	5	12	19	26	..
Sat.	. 6	13	20	27	..	

DECEMBER						
Sun.	. .	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. .	3	10	17	24	31
Sat.	. 4	11	18	25	..	

CALENDAR 1919-1920

1919—July 1 Tuesday.....University Buildings closed.
July 10 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
Aug. 1 Friday.....Last day for receiving applications for the September Examinations in Arts.
Sept. 1 Monday.....Labour Day. University Buildings closed.
Sept. 2 Tuesday .....Last day for receiving applications for the Supplemental Matriculation Examination.
Sept. 4 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
Sept. 10 Wednesday...Supplemental Examinations in Arts begin.
Sept. 12 Friday.....Supplemental Junior Matriculation Examination conducted by the University Matriculation Board begins.
Sept. 26 Friday.....Meeting of University College Council.
Sept. 27 Saturday.....Meeting of the Faculty of Arts of Victoria College.
Sept. 29 Monday.....Enrolment in classes by the various Professors begins at 9.00 a.m.
Sept. 29 Monday.....Meeting of the Council of the Faculty of Arts.
Sept. 30 Tuesday.....Academic Year begins at 9.00 a.m.
Sept. 30 Tuesday.....The opening address by the President to the students of all the Faculties at 3 p.m., in Convocation Hall.
Sept. 30 Tuesday.....Last day for the completion of registration in person for the Session 1919-1920.
Sept. 30 Tuesday.....Enrolment in classes for the Session 1919-1920 to be completed at 5 p.m.
Oct. 1 Wednesday...Lectures begin at 9.00 a.m.
Oct. 1 Wednesday...Meeting of the Faculty of Arts of Victoria College.
Oct. 3 Friday.....Meeting of University College Council.
Oct. 3 Friday.....Meeting of the Senate of Victoria College.
Oct. 6 Monday.....Meeting of the Council of the Faculty of Arts.
Oct. 9 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
Oct. 9 Thursday.....Charter Day, Victoria College.
Oct. 10 Friday.....Meeting of Senate.

Oct. 11 Saturday.....Stated meeting of the Caput to deal with requests as to social functions until Nov. 15.

Oct. 29 Wednesday...Meeting of the Faculty of Arts of Victoria College.

Oct. 31 Friday.....Meeting of the Senate of Victoria College.

Nov. 6 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.

Nov. 7 Friday.....Meeting of University College Council.

Nov. 10 Monday.....Meeting of the Council of the Faculty of Arts.

Nov. 14 Friday.....Meeting of Senate.

Nov. 19 Wednesday...Annual General Business Meeting of the Convocation of Trinity College.

Nov. 20 Thursday.....Annual General Meeting of the Corporation of Trinity College.

Nov. 26 Wednesday...Meeting of the Faculty of Arts of Victoria College.

Dec. 1 Monday .....Last day for receiving applications for the January Examinations in Arts.

Dec. 4 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.

Dec. 5 Friday.....Meeting of University College Council.

Dec. 5 Friday.....Meeting of the Senate of Victoria College.

Dec. 8 Monday.....Meeting of the Council of the Faculty of Arts.

Dec. 12 Friday.....Meeting of the Senate.

Dec. Monday-
15–19 Friday....Term Examinations.

Dec. 19 Friday.....Last day of Lectures. Term ends at 12 noon.

Dec. 19 Friday.....Railway certificates issued at 12 noon.

Dec. 25 Thursday.....University Buildings closed.

1920—Jan. 1 Thursday.....University Buildings closed.

Jan. 2 Friday.....Supplemental Examinations in Arts begin.

Jan. 2 Friday .....Meeting of the Faculty of Arts of Victoria College.

Jan. 2 Friday.....Meeting of University College Council.

Jan. 5 Monday.....Meeting of the Council of the Faculty of Arts.

Jan. 6 Tuesday.....Easter Term begins.

Jan. 8 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.

Jan. 9 Friday.....Assembly of the Students of all Faculties in Convocation Hall at 12.10 p.m.

Jan. 9 Friday.....Meeting of Senate.
Jan. 15 Thursday.....Inauguration Day, Trinity College.
Jan. 28 Wednesday...Meeting of the Faculty of Arts of Victoria College.
Feb. 5 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
Feb. 6 Friday.....Meeting of University College Council.
Feb. 6 Friday.....Meeting of the Senate of Victoria College.
Feb. 9 Monday.....Meeting of the Council of the Faculty of Arts.
Feb. 13 Friday.....Meeting of Senate.
Feb. 18 Wednesday...Ash Wednesday.
Feb. 25 Wednesday...Meeting of the Faculty of Arts of Victoria College.
Mar. 4 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
Mar. 5 Friday.....Meeting of University College Council.
Mar. 5 Friday.....Meeting of the Senate of Victoria College.
Mar. 8 Monday.....Meeting of the Council of the Faculty of Arts.
Mar. 12 Friday.....Meeting of Senate.
Mar. 15 Monday.....Last day for receiving applications for Annual Examinations in Arts and Law.
Mar. 31 Wednesday...Last day for submitting LL.B. theses.
Mar. 31 Wednesday...Meeting of the Faculty of Arts of Victoria College.
Apr. 2 Friday.....Meeting of University College Council.
Apr. 2 Friday.....Meeting of the Senate of Victoria College.
Apr. 2 Friday.....University Buildings closed.
Apr. 5 Monday.....Meeting of the Council of the Faculty of Arts.
Apr. 8 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
Apr. 9 Friday.....Meeting of Senate.
Apr. Monday-
19–23 Friday....Term Examinations.
Apr. 23 Friday.....Lectures in Arts end.
May 1 Saturday.....Annual Examinations in Arts, Law, Pharmacy, Music, and Agriculture begin.
May 1 Saturday.....Last day for receiving applications for the Alexander Mackenzie Fellowships in Political Science.
May 1 Saturday.....Last day for receiving applications for the June Examinations in Arts.
May 5 Wednesday...Meeting of the Faculty of Arts of Victoria College.

May 6 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
May 7 Friday.....Meeting of University College Council.
May 7 Friday.....Meeting of the Senate of Victoria College.
May 10 Monday.....Meeting of the Council of the Faculty of Arts.
May 14 Friday.....Meeting of Senate.
May 15 Saturday.....Last day for receiving applications from candidates for Junior Matriculation Scholarships.
May 24 Monday.....University Buildings closed.
May 26 Wednesday...Meeting of the Faculty of Arts of Victoria College.
June 1 Tuesday.....Last day for receiving applications for Fellowships.
June 2 Wednesday...Meeting of Senate.
June 4 Friday.....University Commencement.
June 10 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
June 16 Wednesday...Senior Matriculation Examination begins.
July 1 Thursday.....University Buildings closed.

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Miss Mabel Cartwright, B.A.

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Assistant Superior.....Rev. Francis Gerald Powell.
Bursar and Registrar.....Rev. Frederick Daniel Meader, B.A.

Note:—Communications relating to standing, curricula, instruction and examinations in the Faculty of Arts are to be addressed to the Registrar of the University; enquiries with reference to College instruction and residence are to be addressed to the Registrar of the College concerned.

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1918–1919.

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Dean..... ALFRED BAKER, M.A., LL.D.

Secretary.....JAMES BREBNER, B.A.

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(Ob.)

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Cooksville.

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JAMES HERBERT WHITE, PH.D., B.Sc.F.,
Assistant Professor of Botany, (U.)
75 Browning Avenue.

RALPH HODDER WILLIAMS, M.A., OXON., A.M., COLUMBIA,
Assistant Professor of History, (U.)
317 Kendal Avenue.

LECTURERS.

MISS MARGARET ELEANOR THEODORA ADDISON, B.A.,
Lecturer in German, (V.)
Annesley Hall.

EDWARD ALEXANDER BOTT, B.A.,
Lecturer in Philosophy, (U.)
On leave of absence.

ALEXANDER GRANT BROWN, B.A., M.A., OXON.,
Lecturer in Ancient History, (C.)
596 Huron Street.

**On Active Service during the Session 1918-1919.*

WALTER THEODORE BROWN, M.A., PH.D., HARVARD,
Lecturer in Ethics, (V.)
398 Eglington Avenue, West.

MISS MABEL CARTWRIGHT, B.A.,
Lecturer in English, (T)
St. Hilda's College.

WILBERT AMIE CLEMENS, M.A., PH.D., CORNELL,
Lecturer in Elementary Biology, (U.)
307 Dupont Street.

CHARLES NORRIS COCHRANE, B.A., B.A., OXON.,
Lecturer in Ancient History, (C.)
Ainger Apartments, Bloor Street, East.

BEAUMONT SANDFIELD CORNELL, M.B.,
Lecturer in Comparative Anatomy, (U.)
91 Dupont Street.

*ALAN FREETH COVENTRY, B.A., OXON.,
Lecturer in Vertebrate Embryology, (U.)
University of Toronto.

HENRY FRANKLIN DAWES, M.A., PH.D.
Special Lecturer in Physics, (U.)
600 Manning Avenue.

DAVID DUFF, M.A., B.D., EDIN.,
Lecturer in Latin, (C.)
85 Woodlawn Avenue, West.

JOHN DELATRE FALCONBRIDGE, M.A., LL.B.,
Lecturer in Commercial and International Law, (U.)
22 Chestnut Park Road.

ARTHUR HAIRE FORSTER, B.A., B.D., TRIN. COLL., DUBLIN,
Lecturer in Greek, (T.)
85 Cowan Avenue.

WILLIAM STANLEY FUNNELL, M.A.,
Lecturer in Chemistry, (U.)
151 Macpherson Avenue.

WILLIAM GEORGE HARDY, B.A.,
Lecturer in Latin, (C.)
55 Charles Street West.

GEOFFREY ELWOOD HOLT, M.A., MUS. BAC.,
Lecturer in German, (C.)
280 Bloor Street, West.

SAMUEL HENRY HOOKE, M.A., OXON., B.D., LOND.,
Special Lecturer in History, (U.)
20 Highview Crescent.

**On Active Service during the Session 1918-1919.*

FRANÇOIS CHARLES ARCHILE JEANNERET, B.A.,
Lecturer in French, (C.)
70 St. Albans Street.

WILLIAM PAUL MCCLURE KENNEDY, M.A., DUBLIN, OXON., LITT.D., DUBLIN,
Substitute Lecturer in History (U.), *and Substitute Lecturer in English*, (C.)
Athelma Apartments, Grosvenor Street.

AUGUSTUS HENRY FRAZER LEFROY, M.A., OXON.,
Special Lecturer in Federal, English and Colonial Constitutional Law, (U.)
(Ob.).

*ANGELO LIPARI, M.A., COLUMBIA,
Lecturer in Italian and Spanish, (U.)
University of Toronto.

HERBERT SUTHERLAND MCKELLAR, B.A.,
Lecturer in French, (C.)
139 Rushton Road.

REV. EDMUND JOSEPH MCCORKELL, B.A., M.A., CATH. UNIV. OF AMER.,
Lecturer in Ethics,
St. Michael's College.

ALEXANDER MACLEAN, B.A.,
Lecturer in Geology, (U.)
102 College Street.

*HENRY ALLEN MCTAGGART, M.A., B.A., CANTAB.,
Lecturer in Physics, (U.)
University of Toronto.

*CHARLES VINCENT MASSEY, B.A., B.A., OXON.,
Lecturer in History, (U.)
71 Queen's Park.

MARCEL MORAUD, L. ÈS L., DIP. D'ET. SUP.,
Lecturer in French, (C.)
555 Palmerston Boulevard.

*JOHN HENRY MOZLEY, M.A., CANTAB.,
Lecturer in Classics, (T.)

REV. WILLIAM HUDSON MURRAY, B.A.,
Lecturer in French, (M.)
St. Michael's College.

PAUL MICHAEL O'SULLIVAN, M.A., M.B.,
Lecturer in Psychophysiology, (M.)
183 Blythwood Road.

REV. WILLIAM ARTHUR POTTER, M.A., B.D.,
Lecturer in Oriental Languages and Literature, (V.)
47 Castlefield Avenue.

**On Active Service during the Session 1918-1919.*

IRVINE RUDSDALE POUNDER, M.A.,
Lecturer in Mathematics, (U.)
21 Hazelton Avenue.

REV. WILLIAM ROLLO, M.A., ABERDEEN,
Lecturer in Hebrew, (T.)
Trinity College.

MISS MARY COYNE ROWELL, B.A.,
Lecturer in French, (*V.*)
113 Bloor Street, West.

MISS LAILA CORDELIA SCOTT, M.A.,
Lecturer in German, (T.)
St. Hilda's College.

REV. JOHN JOSEPH SHERIDAN, B.A., M.A., CATH. UNIV. OF AMERICA.
Lecturer in French, (M.)
St. Michael's College.

HENRY POWELL SPRING, B.A., VERMONT, M.A., COLUMBIA,
Lecturer in French, (T.)
Trinity College.

*WILLIAM DAVIES THOMAS, B.A., OXON.,
Lecturer in English, (T.)

JOSEPH ELLIS THOMSON, B.A.Sc.,
Lecturer in Mineralogy, (U.)
57 Queen's Park.

MISS MOSSIE MAY WADDINGTON, M.A.,
Lecturer in English, (T.)
97 Glen Grove Avenue, West.

WILLIAM STEWART WALLACE, B.A., M.A., OXON.,
Lecturer in History, (U.)
59 Poplar Plains Road.

JOHN NEVILLE WOODCOCK, M.A., OXON.,
Lecturer in Classics, (T.)
470 Palmerston Boulevard.

WILLIAM DUDLEY WOODHEAD, B.A., OXON., M.A., ALBERTA,
Lecturer in Latin, (C.)
138 St. Clement's Avenue.

OTHER APPOINTMENTS.

MISS LILIAN VALENTINE BAKER, M.A.,
Technical Assistant in Botany, (U.)
586 Spadina Avenue.

*PAUL BALBAUD,
Instructor in French, (C.)

**On Active Service during the Session 1918-1919.*

MISS ELIZABETH DONALDA BAWDEN,
Class Assistant in Biology, (U.)
71 Sussex Avenue.

LOUIS AUGUSTE BIBET,
Instructor in French, (C.)
Upper Canada College.

NORMAN KIER BIGELOW, B.Sc., IOWA,
Assistant in Systematic Biology, (U.)
109 Bloor Street, West.

MISS ELVIE LYONA BISHOP, B.A.,
Assistant Demonstrator in Physics, (U.)
396 Huron Street.

FRANK LEVER BLAKE,
Class Assistant in Astro-Physics, (U.)
65 Beaty Avenue.

EDWARD ALEXANDER BOTT, B.A.,
Laboratory Assistant in Psychology, (U.)
On leave of absence.

MRS. EDWARD ALEXANDER BOTT, B.A.,
Instructor in History, (U.)
325 Huron Street.

MRS. HARRIET ESTHER HUDSON BRANCH, B.Sc., LIVERPOOL; M.Sc., CAL.,
Demonstrator in Biochemistry, (U.)
17 Harbord Street.

NESTORE CACCIAPUOTI, M.A.,
Temporary Instructor in Italian, (U.)
56 Elm Street.

*MICHELE CARLO EMMANUELE CATALANO, M.A.,
Instructor in Italian and Spanish, (U.)

IBRA LOCKWOOD CONNORS, B.A., MCMASTER,
Assistant in Botany, (U.)
McMaster Hall.

WILLIAM ANDREW COOK, B.A.,
Assistant in the Psychological Laboratory, (U.)
12 Charles Street, East.

JAMES HENRY COTTON, M.A., M.D.,
Class Assistant in Biology, (U.)
703 Spadina Avenue.

EDWARD HORNE CRAIGIE, B.A.,
Demonstrator in Biology, (U.)
40 Leopold Street.

RAYMOND COMPTON DEARLE, M.A.,
Demonstrator in Physics, (U.)
684 Bathurst Street.

**On Active Service during the Session 1918-1919.*

GEORGE HENRY DUFF, M.A.,
Assistant in Botany, (U.)
South House, University of Toronto.

GEORGE SHARP EADIE, B.A.,
Class Assistant in Biology, (U.)
899 Queen Street, West.

HELEN ISABEL EADIE,
Class Assistant in Physics, (U.)
899 Queen Street, West.

MISS ALICE WILLENA FOSTER, M.A.,
Assistant Demonstrator in Physics, (U.)
100 Queen's Park.

MRS. WILLIAM KASPAR FRASER, M.A.,
Fellow in Physiology, (U.)
151 Bloor Street, West.

ELLIS INGHAM FULMER, B.A., WESLEYAN, M.A., NEBRASKA,
Assistant in Chemistry, (U.)
22 Madison Avenue.

ILA BEATRICE GILES,
Class Assistant in Physics, (U.)
Annesley Hall.

CHARLES WILBUR HARRIS,
Class Assistant in Biology, (U.)
1276 King Street, West.

JUDSON PULFORD HENDERSON, M.A.,
Assistant in Astro-Physics, (U.)
232 Scarborough Road.

ARTHUR ISAACSON, M.B.,
Class Assistant in Biology, (U.)
583 Dundas Street, West.

FRANKLIN BAILIE KEACHIE,
Class Assistant in Astro-Physics,
129 Brunswick Avenue.

LESLIE GIFFORD KILBORN, M.A.,
Fellow in Physiology, (U.)
Burwash Hall.

ROSS STANLEY LANG, B.A.,
Assistant in Physiology, (U.)
Burwash Hall.

CHARLTON PACE LATHROP, B.S., M.S., ILLINOIS,
Fellow in Biochemistry, (U.)
352 Markham Street.

ALEXANDER HENRY LEIM,
Class Assistant in Biology, (U.)
28 Russell Street.

ADELINE MARION LOBB, B.A.,
Temporary Assistant in English, (C.)
41 Willcocks Street.

ALAN WILFRED MCCALLUM, B.Sc.F.,
Assistant in Botany, (U.)
Central Y.M.C.A.

ROBERT JOHN PERCIVAL MCCULLOCH, M.B.,
Class Assistant in Biology, (U.)
102 College Street.

JOHN MACKAY MACDONALD, M.B., C.M.,
Class Assistant in Biology, (U.)
687 Pape Avenue.

MISS JENNIE MCFARLANE, M.A.,
Demonstrator in Botany, (U.)
184 College Street.

MATTHEW DONALD MCKICHAN, B.A., M.B.,
Temporary Assistant in Embryology, (U.)
686 Broadview Avenue.

STEWART MCLEAN, B.A., MCMASTER, M.A.,
Assistant Demonstrator in Physics, (U.)
McMaster Hall.

ARCHIBALD GEORGE MCPHEDRAN, B.A., M.B.,
Class Assistant in Biology, (U.)
923 College Street.

MISS MARY ISABEL MACKAY,
Class Assistant in Physics, (U.)
303 Huron Street.

ABRAHAM LINCOLN MARSHALL, B.A., BRITISH COLUMBIA,
Assistant in Chemistry, (U.)
582 Church Street.

MISS HAZEL CLAIRE MILLAR, B.A.,
Assistant Demonstrator in Physics, (U.)
Argyle House.

JOSEPH WAYLAND MORGAN, B.A.,
Assistant in Chemistry, (U.)
24 Barton Avenue.

MISS AGNES ISABEL MULDREW, B.A.,
Fellow in Biochemistry, (U.)
368 Palmerston Boulevard.

THOMAS CAMPBELL NEWMAN, B.A.,
Assistant in Chemistry, (U.)
63 Walmsley Boulevard.

MISS EDNA WILHELMENE PARK, B.A.,
Preparator in Biology, (U.)
25 Grosvenor Street.

JOSEPH PIJOAN,
Temporary Instructor in Spanish, (U.)
Strathgowan Crescent.

EDWIN JOHN PRATT, M.A., PH.D.,
Instructor in Psychology, (U.)
399 Dupont Street.

ERNEST ROBERT ISAAC PRATT, B.A.,
Assistant Demonstrator in Physics, (U.)
68 Alexander Street.

MISS FLORENCE MARY QUINLAN, B.A.,
Assistant Demonstrator in Physics, (U.)
25 Queen's Park.

MISS ANNIE THERESA REED, B.A.,
Class Assistant in Physics, (U.)
On leave of absence.

MISS MARJORIE GORDON REID, B.A.,
Instructor in History, (U.)
367 Palmerston Boulevard.

JOHN DANIEL ROBINS, B.A.,
Instructor in German, (V.)
187 Lauder Avenue.

BENJAMIN SADOWSKI, B.A.,
Fellow in Mathematics, (U.)
1621 Queen Street, West.

WILLIAM WALKER SHAVER,
Class Assistant in Astro-Physics, (U.)
80 Charles Street, West.

MAURICE EDWARD SMITH, B.A., NEW BRUNSWICK,
Assistant in Chemistry, (U.)
22 Dundonald Street.

MISS MARION ROSE SQUAIR, B.A.,
Assistant in Spanish, (U.)
368 Palmerston Avenue.

ROBERT SPENCER STONE,
Class Assistant in Biology, (U.)
Knox College.

BERNARD FRANZEN SWEDELIUS, B.A., PH.D., COLUMBIA,
Temporary Instructor in Italian and Spanish, (U.)
Cheltenham.

JAMES CARL THOMPSON, B.A.,
Associate Demonstrator in Physics, (U.)
208 Brunswick Avenue.

JOHN FRANCIS TWISS, B.A., MCMASTER,
Assistant Demonstrator in Physics, (U.)
227 Huron Street.

MISS MOSSIE MAY WADDINGTON, M.A.,
Reader in Classics, (T.)
97 Glen Grove Avenue, West.

FRED WILBERT WARD, B.A.Sc.,
Fellow in Biochemistry, (U.)
14 Highview Crescent.

LEROY EGERTON WESTMAN, B.A.,
Assistant in Chemistry, (U.)
540 Confederation Life Building.

HERBERT GEORGE WILLSON, B.A., M.B.,
Class Assistant in Biology (U.)
637 Spadina Avenue.

MISS GLADYS EMILY WOOKEY, B.A.,
Temporary Assistant in English, (C.)
399 Dupont Street.

MISS JESSIE GERTRUDE WRIGHT, M.A.,
Demonstrator in Botany, (U.)
46 Avenue Road.

MISS MARGARET WRONG,
Temporary Assistant in English, (C.)
85 St. George Street.

Medicine.

JAMES CRAWFORD WATT, B.A., M.B.,
Lecturer in Anatomy,
20 Hawthorne Avenue.

Applied Science.

WILLIAM HODGSON ELLIS, M.A., M.B., LL.D.,
Dean of the Faculty,
86 Woodlawn Ave. E.

JAMES THOMAS DYER KING, B.A.Sc.,
Lecturer in Mining Engineering,
87 Pine Crest Road.

FREDERICK ERROL WATSON, B.A.Sc.,
Demonstrator in Drawing,
447 Manning Avenue.

Household Science.

MISS CLARA CYNTHIA BENSON, PH.D.,
Associate Professor of Physiological Chemistry,
Department of Household Science.

MISS NORMA HENRIETTA CARSWELL FORD, B.A.,
Special Assistant in Household Science,
96 Dunn Avenue.

MISS CARLOTTA MAUDE HARWOOD, B.A.,
Assistant in Biochemistry,
84 Admiral Road.

MISS EVELYN M. HICKMANS, M.Sc., BIRMINGHAM,
Lecturer in Home Management,
Department of Household Science.

MISS HANNAH HILL, B.Sc., COLUMBIA,
Lecturer in Household Science,
255 Brunswick Avenue

MISS ANNIE LEWISA LAIRD, M.S., DREXEL,
Associate Professor of Household Science,
Department of Household Science.

MISS MAUDE SARA MCDONALD, B.A.,
Laboratory Assistant in Household Science.
11 Oriole Gardens.

MISS EDNA VICTORIA MILLAR, B.A.,
Instructor in Household Science,
48 Langley Avenue.

MISS RUTH KATHLEEN NEFF, B.A.,
Instructor in Physiological Chemistry,
76 Close Avenue.

MISS LAURA LAVINIA OCKLEY, B.A.,
Instructor in Household Science,
50 Rosemount Avenue.

MISS ETHEL ANNA ROBERTSON, B.A.,
Instructor in Sewing,
19 Hazelton Avenue.

MISS JENNIE ROWNTREE,
Lecturer in Household Science,
705 Spadina Avenue.

MRS. CHARLES VINCENT SCOTT, B.A.,
Instructor in Household Science,
29 Highview Crescent.

DEGREE OF BACHELOR OF ARTS.

I. ENTRANCE.

1. There are two ways of entering the Faculty of Arts, by passing either (a) the Junior Matriculation Examination, with or without Honours, or (b) the Senior Matriculation Examination.

(A)—By Junior Matriculation.

2. The subjects of Pass Junior Matriculation are:—Latin, English, History, Mathematics, and any two of the following—Greek, German, French, Experimental Science. In each subject two papers are set. A candidate who has passed Junior Matriculation without Honours can be admitted only to the Pass Course of the First Year. A candidate preparing to enter an undergraduate Honour Course should select his options so as to meet the requirements of that course. See Sections 58, 60 and 24.

3. The pass standard is forty per cent. of the marks assigned to a paper with an average of sixty per cent. and with such modification or exceptions as may be deemed proper in consideration of the total number of marks and the reports of the staff of the school.

4. A candidate who has obtained the average of sixty per cent. on the required twelve papers but has failed to obtain forty per cent. in at most three of the papers may complete Junior Matriculation by obtaining forty per cent. on each of these papers at any one subsequent examination.

5. A candidate who has obtained forty per cent. on each of at least eight papers, with an average of sixty per cent. on the same, will be credited with these papers. In order to complete his matriculation he must obtain, at one subsequent examination, forty per cent. on each of the remaining papers, with an average of sixty per cent.

6. The annual examinations for Junior Matriculation are held in June and September by the Department of Education, under the direction of the University Matriculation Board.

7. Certificates of examinations recognized as equivalent in value may be accepted *pro tanto* for Pass Junior Matriculation.

8. In view of recent advances in the standards for Junior Matriculation, only those certificates which meet the requirements of this University as to subjects and percentages will be accepted for matriculation.

9. The regulations respecting Junior Matriculation with the schedule of examinations which may be accepted are to be found in the Curriculum for Junior Matriculation.

(B)—By Senior Matriculation.

10. The Senior Matriculation examination is the same as that of the First Year, and a successful candidate ranks thereafter as an undergraduate in the Faculty of Arts.

11. The subjects and standards for Senior Matriculation are those prescribed for the Pass Course or for an Honour Course of the First Year.

12. A student (a) who is entitled to complete his Junior Matriculation by passing in at most three papers (see section 4), or (b) who is over twenty-one years of age and has no qualifying certificate, when writing on the examination of the First Year, is held to be a candidate for Senior Matriculation. Such a student, when in attendance on lectures, is known as a NON-MATRICULATED STUDENT. See secs. 22 (*b* and *c*).

13. The Senior Matriculation examination may be taken without attendance on lectures in the University, except in the case of those HONOUR COURSES in which laboratory work is required.

14. A candidate for Senior Matriculation without attendance on lectures at the University must have completed the sixteenth year of his age on or before the first of October preceding the examination at which he presents himself.

15. The annual examinations for Senior Matriculation are held in May, June, and September.

16. Certificates of examinations recognized as equivalent in value to the examination of the First Year may be accepted *pro tanto* for Senior Matriculation. See Section 64.

17. The acceptance of certificates of equivalent examinations makes it possible under definite conditions for MATRICULATED and NON-MATRICULATED students to enter the Pass Course or certain Honour Courses at the Second Year. See Sections 28 to 32.

II. PROCEDURE FOR ADMISSION.

(a) General Conditions.

18. A student on applying for permission to enter upon a course of study in any Year is required to present to the Registrar of the University (*a*) any certificates on which he may be granted (1) Junior Matriculation in whole or in part, (2) Senior Matriculation in whole or in part, or (3) exemption from instruction and examination in pass subjects of the First Year, or (*b*) any other evidence of ability to take the work proposed.

19. An applicant holding a certificate from the Department of Education of a Province of the Dominion other than Ontario must submit an official statement of marks with his application for admission.

20. An applicant should secure the necessary blank forms from the Registrar of the University, return them to him, when properly filled out, **and await the decision of the Committee on Admissions before leaving for Toronto.**

21. Every applicant for admission must produce satisfactory certificates of good character

(b) Entrance at the First Year.

22. Applications for admission to the First Year will be considered from the following classes of students:—

(*a*) The student who has complete Pass Junior Matriculation. This includes those students who possess certificates accepted by the University as equivalent to Junior Matriculation. Such a student when admitted becomes an UNDERGRADUATE in the Faculty of Arts. For the list of equivalent certificates see the Junior Matriculation Curriculum.

(*b*) The student who is entitled to complete his Junior Matriculation by passing in at most three papers. Such a candidate, when admitted, is known as a NON-MATRICULATED STUDENT and is required to fulfil such matriculation conditions as the Council may determine in order that he may be eligible for registration in the Second Year.

(*c*) The student without qualifying certificates who is over twenty-one years of age. Such a candidate, when admitted, is known as a NON-MATRICULATED STUDENT and is required to complete Senior Matriculation in order that he may be eligible for registration in the Second Year.

(*d*) The student who is not proceeding to a degree in Arts, *i.e.*, an OCCASIONAL STUDENT. Such a student is admitted only on special petition and from session to session.

23. On or before the first of October of the session in which he applies for registration, a matriculated student or undergraduate must have completed the sixteenth year of his age; a non-matriculated student or candidate for Senior Matriculation should have completed the nineteenth year of his age, and an occasional student must have completed the nineteenth year of his age.

24. A student (undergraduate, non-matriculated, or occasional) who seeks admission to the classes of the First Year in any of the languages, Greek, Latin, German, French, in which he has not passed the Matriculation examination, and the student whose last examination in Latin was prior to 1918, must first satisfy the College in which he seeks enrolment, of his ability to undertake the work of these classes. The colleges do not undertake to provide instruction in elementary Greek, Latin, German, and French.

25. On or before the fifteenth day of September the student who wishes to attend the University as a non-matriculated or occasional student should submit to the Registrar of the University an application for permission to attend lectures in the University or its Colleges. The applicant must satisfy the authorities of the University and of his College, by certificate or otherwise, before registration, of his ability to undertake the work of the class or classes he proposes to attend.

26. A candidate who has Junior Matriculation without Honours can be admitted only to the Pass Course of the First Year.

27. Unless special permission is granted by the Council, every student seeking to enter an Honour Course of the First Year must present a certificate on which he would receive credit in Pass Latin and in Pass Mathematics (Algebra and Geometry) of the First Year as well as in at least two other pass subjects. For the details see Sec. 60.

(c) Entrance at the Second Year.

28. A candidate holding a certificate on which he may be granted standing for all or all but one of the subjects of the First Year may enter the Second Year on payment of the fee of Fifteen Dollars. A candidate who lacks one subject will be required to pass in that subject at a subsequent examination, prior to admission to the Third Year.

29. The only courses open to a student entering on such certificates at the Second Year are the Pass Course, and on conditions to be determined by the Council, the Honour Courses in Political Science and in Philosophy.

30. A matriculated student entering the Second Year must have completed the seventeenth year of his age on or before the first of October of the session in which he proposes to enter.

31. A non-matriculated student wishing to enter the Second Year should be not less than twenty years of age.

32. A non-matriculated student in attendance upon lectures, proceeding regularly to the degree must complete either Junior Matriculation as under section 22*b*, or Senior Matriculation as under section 22*c*, before he is eligible for registration in the Second Year.

(d) Admission Ad Eundem Statum.

33. An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

34. An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction, (2) an official certificate of character and academic standing.

35. Such an applicant may not compete for scholarships at his first examination if admitted to a standing lower than that held in his own University, but, if he obtain honours, he shall subsequently enjoy all the rights and privileges of an undergraduate of this University.

III. REGISTRATION AND ENROLMENT.

36. Every student in attendance proceeding to the degree of Bachelor of Arts is required to register in the University and to enrol in either University College, or Victoria College, or Trinity College, or St. Michael's College.

37. Registration in the University may take place on and after the first of September, and must be completed by the student in person on or before the thirtieth of September, 1919. See Section 20.

38. Enrolment with the instructors of the University and of the Colleges will begin at 9 a.m. on the twenty-ninth of September and must be completed by 5 p.m. on the thirtieth of September, 1919.

39. After the thirtieth of September no student, matriculated, non-matriculated, or occasional, will be allowed registration for the whole or part of the session 1919-1920, without the consent of the Council.

40. Every petition for registration subsequent to the thirtieth of September and prior to the first of November, must be accompanied by a sum of money reckoned at one dollar per diem for each day after the first of October. For sufficient cause the whole or part of such a sum may be refunded.

41. A student who has not enrolled in a subject or subjects on or before the thirtieth of September, may, at the discretion of the head of the department concerned, be refused admission to the classes or laboratories, until he shall have satisfied the head of the department that he is competent to proceed with the class. In order to qualify himself for admission such a student may be required to obtain tuition at his own expense.

42. A non-matriculated student, or a student who, having failed to obtain standing, is repeating a year, will be admitted on probation only, and will be allowed to register for the Easter Term, only on the recommendation of his College and with the consent of the Council.

IV. REGULATIONS RELATING TO STUDENTS IN ATTENDANCE.

43. No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council of the Faculty to be prejudicial to the interests of the University.

44. Students proceeding regularly to the degree are required to attend the courses of instruction and the examinations in all subjects prescribed for students of their respective standing, and no student will be permitted to remain in the University who persistently neglects academic work.

45. Unless special permission is granted by the Council, a student who, at the close of two sessions, has failed to secure standing in his year, will not be permitted further registration in the Faculty of Arts.

46. A non-matriculated student, or a student who, having failed to obtain standing, is repeating a year, will be admitted on probation only, and will be allowed to register for the Easter Term, only on the recommendation of his College and with the consent of the Council.

47. All interference on the part of any student with the personal liberty of another by arresting him, or summoning him to appear before any unauthorized tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council of the Faculty. In particular, students are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles". Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

48. A student who is under suspension, or who has been expelled from a College or from the University, will not be admitted to the University buildings or grounds.

49. The constitution of every University society or association of students in the Faculty of Arts and all amendments to any such constitution must be submitted for approval to the Council of the Faculty. All programmes of such societies or associations must, before publication, receive the sanction of the Council of the Faculty through the President. Permission to invite any person not a member of the Faculty of Arts to preside at or address a meeting of any society or association must be similarly obtained.

50. The name of the University is not to be used in connection with a publication of any kind without the permission of the Caput.

V. FEES.

For the schedule of fees see page 58.

VI. PHYSICAL TRAINING.

51. By order of the Board of Governors each male student proceeding to a degree must take Physical Training in the first and second years of his attendance. He must first undergo a medical examination by the Physical Director of the University in order to determine the character of his training.

VII. COURSES LEADING TO THE DEGREE.

52. A candidate for the degree of Bachelor of Arts must take one of the courses prescribed by the University.

53. The courses for the degree of Bachelor of Arts extend over a period of four academic years.

54. Unless specially exempted by the Council, every undergraduate proceeding to the degree must be in attendance on lectures at the University and at one of the Colleges throughout the session in all the subjects of his academic year.

55. Unless in exceptional cases and by special petition to the Council, no student will be allowed registration in more than two Courses in the First Year, and in not more than one in any subsequent year.

56. The courses leading to the degree of Bachelor of Arts are:

(*a*) The Pass Courses.

(*b*) The Pass Course—Household Science.

(*c*) The following Honour Courses:

Classics.
Greek and Hebrew.
Oriental Languages.
Oriental Languages (Gr. Opt.).
Modern Languages.
English and History (Cl., Mod.).
Modern History.
Political Science.
Commerce and Finance.
Philosophy.
Mathematics and Physics.
Physics.
Biology.
Biological and Physical Sciences.
Physiological and Biochemical Sciences.
Chemistry.
Chemistry and Mineralogy.
Geology and Mineralogy.
Household Science.
Science for Teachers.

(*d*) The Arts and Forestry Course.

57. A candidate who has Junior Matriculation without Honours can be admitted only to the Pass Course of the First Year.

Honour Course Entrance Requirements.

58. Unless special permission is granted by the Council, every student entering an Honour Course of the First Year must present a certificate based upon the work of Honour Matriculation or of an equivalent Examination in at least four subjects (two of which Latin and Mathematics, *i.e.*, Algebra and Geometry, are compulsory) with such standing therein as is specified under the requirements of the Honour Courses in Section 60.

59. In the following section "Honours" shall be interpreted as at least fifty per cent. and "Pass" as at least forty per cent. of the marks assigned to a subject of Honour Matriculation or of an equivalent Examination.

60. The requirements for entrance to the Honour Courses are as follows:

Classics:—Honours in Greek and Latin, Pass in Mathematics (Algebra and Geometry) as well as in at least one of German, French, Physics, Biology, preferably German or French.

Greek and Hebrew:—Honours in Greek, Pass in Latin, Mathematics (Algebra and Geometry) as well as in at least one of English, German, French.

Modern Languages:—Honours in French and in English *or* German *or* History, Pass in Latin, Mathematics (Algebra and Geometry).

English and History (Class. Opt.):—Honours in Greek, Latin and English, Pass in Mathematics (Algebra and Geometry), with a recommendation that German or French be taken in addition.

English and History (Mods. Opt.):—Honours in Latin, French and in English *or* German *or* History, Pass in Mathematics (Algebra and Geometry).

Modern History:
Political Science:
} Honours in English and History, Pass in Mathematics (Algebra and Geometry) and *either*, Honours in Latin and Pass in one of Greek, French, German, *or* Pass in Latin and Honours in one of French, German.

Commerce and Finance:—Honours in English, Pass in Latin, Mathematics (Algebra, Geometry and Trigonometry) and in either French or German.

Mathematics and Physics:—Honours in Mathematics (Algebra, Geometry and Trigonometry), pass in Latin, Physics, as well as in either French or German.

Physics:
Biology:
Biological and Physical Sciences:
Physiological and Biochemical Sciences:
Chemistry:
Chemistry and Mineralogy:
Geology and Mineralogy:
Household Science:
Science for Teachers:
} Pass in Latin and Mathematics (Algebra, Geometry and Trigonometry) as well as in either French or German, and at least one of Physics, Biology, Chemistry.

61. A student admitted to an Honour Course of the First Year by special permission of the Council will be admitted on probation only, and will be allowed to enroll in the Honour Course for the Easter Term, only on the recommendation of his College and of the Department in which he is enrolled on probation.

62. Unless specially exempted by the Council, a student admitted on probation to an Honour Course of the First Year, before proceeding in the Honour Course in the Second Year, must fulfil the conditions of the Pass Course of the First Year in addition to those of the Honour Course.

63. A student admitted on probation to an Honour Course of the First Year will not be allowed by the Council to enroll in any subject beyond the requirements of his course except on the recommendation of his College and of the Department in which he is enrolled on probation.

Equivalent Examinations—First Year.

64. Certificates of having passed the whole or a part of the following examinations *may* be accepted *pro tanto* for Pass Course subjects but not for the individual papers of a subject at the examination of the First Year or Senior Matriculation. Before exemption is granted on any of the certificates mentioned in this Section, a candidate may be required to satisfy the authorities of the University, and of his College, as to the equivalence of the examinations for which exemption is sought.

Province of Ontario.

The Honour Junior Matriculation Examination and the Entrance to the Faculties of Education Examination or examinations of the same standard under other titles.

Province of Nova Scotia.

Senior Leaving Examination.

Province of Manitoba.

First Class Teachers' Examination.

Province of British Columbia.

Senior Grade Examination.

Province of Alberta.

Standard VIII (Grade XII) Examination.

Province of Saskatchewan.

First Class Diploma or Senior Matriculation.

Newfoundland.

Associate in Arts Examination.

Great Britain.

The local Examinations for Senior students, conducted by the Universities of Oxford and Cambridge.

65. A candidate submitting any of the certificates mentioned in the preceding section must submit an official statement of the marks on which the certificate was obtained.

66. In view of the recent change in the standard for passing in the Pass Course only those certificates which meet these conditions as to subjects and percentages will be accepted. Exemption will not be given in part of a subject of the First Year, *e.g.*, a pass percentage in Geometry will not be accepted, a student must pass in each of Algebra and Geometry at one examination to receive credit in Mathematics.

67. The Council will consider applications for the recognition of certificates other than those mentioned.

68. A candidate presenting *pro tanto* certificates is eligible for scholarships and for ranking in Honour Courses but not for standing in the Pass Course.

THE DEGREE OF BACHELOR OF ARTS UNDER SPECIAL CONDITIONS.

69. In order to assist teachers and others who desire to proceed to the degree of Bachelor of Arts, provision has been made for their instruction by 1, Special classes during the regular session, 2, (*a*) Supervision during the academic year, and (*b*) the Summer Session.

70. The Pass Course according to the following scheme will be the basis of instruction:

First Year.....English, Latin, French, Physics *or* Biology, Mathematics (Algebra and Geometry), Trigonometry.

Second Year....English, Latin, French, History, Physics, Biology.

Third Year.....English, History, Political Science. One of (1) Latin, Greek and Roman History, German or French. (2) Chemistry, Geology and Mineralogy.

Fourth Year....English, History, Political Science. One of (1) Latin, Greek and Roman History, German or French. (2) Chemistry, Geology and Mineralogy.

71. The subjects of the Second Year are divided into two groups, which are given in alternate years. The subjects for 1919-1920 are English, French, Physics.

72. The subjects of the Third Year are divided into two groups which will be given in alternate years. The subjects for 1919-1920 are English, Political Science, Chemistry for students taking the Teachers Classes and English, Political Science and French for students taking the Summer Session.

73. These courses are open to persons actually engaged in teaching and to such others as have been approved by the Council. In all cases application for admission must be made to the Registrar of the University through the Secretary of the University Extension Committee.

74. Only under exceptional circumstances will a candidate be allowed to attend classes in more than three subjects during one session of the Teachers' Course.

75. A student holding a certificate of Entrance into the Faculties of Education or an equivalent certificate may enter the Second Year on payment of the fee of $15.00, provided he has credit for at least five of the six subjects of the First Year.

76. A student proceeding to the degree shall on or before the *first of October* of each year submit a statement of the work which he proposes to take (*a*) in the special classes *or* (*b*) under supervision preparatory to the Summer Session, and on or before the *fifteenth of May* of each year, a similar statement of the work he desires to take during the Summer Session.

77. A student will receive credit for each subject in which he secures forty per cent, the minimum required for pass standing, in the Third and Fourth Years.

78. A candidate will not receive credit for a subject of a higher year until he has passed the examination of the lower year in the same subject. He may, however, be a candidate for examination in the work of two successive years in the same subject.

79. A candidate who has not been granted complete First Year standing may not enter upon the work of the Third Year, nor a candidate who has not been granted complete Second Year standing, upon the work of the Fourth Year.

80. Pursuant to Section 124 of the Revised Statutes of Ontario 1913, in the case of a candidate for the degree of Bachelor of Arts, registered in the Teachers' Course, enrolment in one of the Arts Colleges shall not be necessary.

81. Instruction during the regular session will be given as far as possible to meet the convenience of the members of the classes residing in Toronto and its immediate vicinity.

82. The Summer Session is held during July and a part of August, and is open (*a*) to persons engaged in teaching, (*b*) to such others as have been approved by the Council of the Faculty of Arts, and (*c*) to regular students who have failed to receive credit in one or at most two subjects of the Pass Course, provided always that instruction in such subjects has been arranged for that Summer Session.

83. At least two years will be required to complete the work of the Second Year and such work will involve (*a*) supervision during two regular sessions, and (*b*) attendance at two Summer Sessions.

84. The work of the Third and Fourth Years under this plan will require at least three additional years in which attendance for two Summer Sessions is necessary.

85. Instead of completing his course under this plan a candidate proceeding to the degree is advised to attend the regular courses of instruction in the Fourth Year, in which case the Fourth Summer Session is not compulsory. Students are advised to acquaint themselves with the regulations of the Department of Education respecting High School Assistants and Public and Separate Inspector's certificates.

86. A candidate will not be allowed to present himself for examination in any subject until he has attended one Summer Session and has had supervision of his work during one academic year.

87. Supervision of work should precede the Summer Session, but as such supervision may follow class instruction, assistance in the work of either group of the Second Year or of the Third Year will be provided.

VIII. CONDITIONS FOR ACADEMIC STANDING.

Credit in Pass Course Subjects.

Applicable to the First and Second Years.

88. A student must secure at least fifty per cent. in each subject, but where he has secured an average of fifty per cent. of all the marks assigned to the subjects of his annual examination, forty per cent will be accepted in a subject.

89. In the Second and Third Years, where five subjects are taken, a candidate who fails in two subjects cannot proceed with the work of the higher year, until he has passed in both of these subjects.

Applicable to the Third and Fourth Years.

90. No candidate will receive credit in a pass subject unless he obtain at least forty per cent. of the examination marks, as well as forty per cent. of the aggregate of the term and examination marks in that subject.

91. A candidate in an Honour Course who has failed to secure standing in his year will receive credit in any pass subject in which he has obtained seventy-five per cent. of the examination marks as well as seventy-five per cent. of the aggregate of the term and examination marks in that subject. A candidate who has received credit under this section shall not, in repeating the year, be eligible for scholarships or relative ranking in an Honour Course.

92. If a candidate, who is exempt from examination in Greek or Latin or German or French, pass subjects attached to Honour Courses of the First Year, obtains a minimum of fifty per cent. on any one or more of these subjects as an Honour subject of the First Year, he shall be exempt in the Second Year from examination in such pass subject or subjects. A student shall not be granted credit a second time for a Pass or Honour subject for which he has already received credit.

93. In the First and Second Years a candidate who has failed to receive credit in one of a group of optional subjects may with the approval of the Council present himself at the supplemental examinations in any other of the alternative subjects, except in the case of those subjects in which term work is an integral part of the subject. In such a substitution, however, the candidate must, unless exempted by the Council, comply with all the conditions respecting term work, *i.e.*, there can be no transfer of term marks from the subject originally chosen to that substituted.

94. A successful candidate in a subject is graded as "A" or "B" or "C" or "Below the Line (B.L.)" according to the percentage obtained in the subject. For grade "A," a candidate must obtain at least seventy-five per cent., for grade "B", at least sixty per cent., for grade "C," at least fifty per cent., for grade "B.L" at least forty per cent. of the marks assigned to a subject.

Standing in the General Course.

Applicable to the First and Second Years.

95. A candidate for the examination of the First Year in May, June or September will be granted standing (*a*) provided he obtains at least fifty per cent. in each of the six subjects of the year, or (*b*) provided he obtains an average of at least fifty per cent. of all the marks assigned to the six subjects of the year and also receives credit in at least four of the six subjects.

96. A candidate for the examination of the First Year who has been granted exemption from examination in one or more subjects will be granted standing (*a*) provided he obtains at least fifty per cent. in each of the subjects necessary to complete his year, or (*b*) provided he obtains an average of at least fifty per cent. of all the marks assigned to such subjects and receives credit for all but one or at most two of these subjects.

97. A candidate for the examination of the Second or the Third or the Fourth Year in May or September will be granted standing (*a*) provided he obtains at least fifty per cent. in each of the five subjects of the year, or (*b*) provided he obtains an average of at least fifty per cent. of all the marks assigned to the five subjects of the year and also receives credit in at least three of the five subjects (or, if he has failed to obtain credit for a subject of the previous year), in at least four of the six subjects.

98. In the Second and Third Years, where five subjects are required, a candidate who fails in two subjects cannot proceed with the work of the higher year until he has passed in both of these subjects.

Standing in the General Course.

Applicable to the Third and Fourth Years.

99. A candidate for the examination of the Third or the Fourth Year in May or September will be granted standing, provided he passes (1) in all the subjects of the year and in the one subject of the previous year in which he may have failed, or (2) in all but one of these subjects, or (3) in all but two of these subjects.

100. A candidate who has been granted standing in his year but has failed in two subjects must obtain credit in at least one of these subjects before he can register in the next higher year.

101. A candidate who has failed to secure complete First Year standing may not enter upon the work of the Third Year, nor may a candidate who has failed to secure complete Second Year standing enter upon the work of the Fourth Year.

102. A candidate who obtains an average of seventy-five per cent. of all the marks assigned to the subjects of his annual examination will be awarded Grade A standing in his course, provided that he has not failed in more than one subject either of his academic year or of the previous year.

103. A candidate who obtains under like conditions an average of sixty per cent. will be awarded Grade B standing.

104. A candidate who obtains under like conditions an average of fifty per cent. will be awarded Grade C standing.

Honours in Special Subjects.

105. A candidate who obtains at least seventy-five per cent. of the marks assigned to an Honour subject will be awarded First Class Honours.

106. A candidate who obtains at least sixty-six per cent. but less than seventy-five per cent. of the marks assigned to a special subject will be awarded Second Class Honours.

107. A candidate who obtains at least sixty per cent. but less than sixty-six per cent. of the marks assigned to a special subject will be awarded Third Class Honours.

108. A candidate who obtains at least fifty per cent. but less than sixty per cent. of the marks assigned to a special subject will be ranked as "Below the Line".

109. No candidate will be granted Honours or Below the Line in a special subject, where term work is taken into account, unless he obtain at least fifty per cent. of the marks at the May examination, as well as fifty per cent. of the aggregate of the term work and examination marks in that subject.

110. A candidate who fails to obtain fifty per cent. in a special subject, may be granted credit therein, as a pass subject.

Degree with Honours.

Applicable to the First and Second Years.

111. In order to obtain standing in an Honour Course, a candidate must have obtained (*a*) at least fifty per cent. in each Honour subject of the course as well as (*b*) an average of at least fifty per cent. of all the marks assigned to the pass subjects attached thereto, and credit for all, or all but one of these pass subjects.

Applicable to the Third and Fourth Years.

112. In order to obtain standing in a Special Course a candidate must have obtained at least fifty per cent. in each special subject of the course and credit for all, or all but one, of the subjects of the General Course attached thereto.

113. A candidate will be awarded First Class Honours in order of merit who has obtained an average of seventy-five per cent. of all the marks assigned to the Honour subjects of his course, and has also fulfilled the conditions of Section 112.

114. A candidate will be awarded Second Class Honours in order of merit who has obtained an average of at least sixty-six per cent. but less than seventy-five per cent. of all the marks assigned to the Honour subjects of his course, and has also fulfilled the conditions of Section 112.

115. A candidate will be awarded Third Class Honours who has obtained an average of at least sixty per cent. but less than sixty-six per cent. of all the marks assigned to the Honour subjects of his course, and has also fulfilled the conditions of Section 112.

116. A candidate will be ranked as "Below the Line" who has obtained less than sixty per cent. of all the marks assigned to the Honour subjects of his course, and has also fulfilled the conditions of Section 112.

117. A candidate in an Honour Course, who has failed in two Pass subjects, will have his standing deferred both in the Honour Course and in the individual subjects thereof, and will be debarred from registration and enrolment until he has passed in each of these Pass subjects.

118. A candidate in an Honour Course will not be granted standing in his year if he fail in more than two Pass subjects.

119. A candidate of the First or Second Year who fails to secure standing in an Honour Course may be transferred to the Pass Course on such conditions as the Council may impose. Such a candidate may accept the award or may repeat the year and again compete for Honours.

120. A candidate in an Honour Course of the Third Year who fails to secure standing must repeat the Year, unless he be transferred to the Pass Course by the Council on the special report of the Board of Examiners.

121. A candidate in the Fourth Year who fails to obtain standing in his Honour Course may on recommendation of the examiners be awarded a Pass degree. Such a candidate may accept the award or may repeat the year and again compete for Honours.

122. A candidate who has not been granted complete First Year standing, may not enter upon the work of the Third Year, nor a candidate who has not been granted complete Second Year standing upon the work of the Fourth Year.

Term Work.

123. In the Pass Course, reports on the term work of every student proceeding to a degree will be made in all the subjects of each year.

124. The marks for term work in a subject of the Pass Course will be determined in the manner considered most suitable by the teaching staff in that subject.

125. In all subjects of the Pass Course, the ratio of term marks to examination marks will be as fifty to one hundred, except in the English where a candidate must obtain forty per cent. of the marks assigned to term work as well as of those assigned to the examination. See the second paragraph under the subject of English.

126. Term work in English and in the Pass Sciences of the Second, Third and Fourth Years is an integral part of each of these subjects. A candidate whose term work in any one of these subjects is reported as unsatisfactory must repeat it.

127. When a student fails to secure credit in a Pass subject because of a deficiency in term marks he must either (1) earn a new term mark under conditions to be determined by the staff in the subject, and repeat the examination or (2) make up the deficiency of term marks by securing a corresponding increase in his examination marks, except in the case of English and the Pass Sciences of the Second, Third and Fourth Years, respecting which see Section 125.

128. In the Honour Courses, reports in term work will be made wherever such work is specified as an integral part of the course.

129. In an Honour Course, the ratio of term marks to examination marks in a subject will be determined by the staff in that subject.

130. A term examination shall not, unless it be so specified in the Calendar take the place of the Annual Examination in May on any portion of the prescribed work of an Honour Course.

Conditions of Entrance to the Various Years.

131. Unless in exceptional cases and by special petition to the Council of the Faculty, a non-matriculated student who desires to enter an Honour Course of the First Year must, in addition to evidence respecting other subjects, submit proof that his knowledge of Latin is at least equivalent to that required for Junior Matriculation.

132. Unless special permission is granted by the Council, every student entering an Honour Course of the First Year must present a certificate on which he would receive credit in Pass Latin, and in Pass Mathematics (Algebra and Geometry) of the First Year as well as in at least two other subjects as specified in Section 60.

133. Unless special permission is granted by the Council, a student of the Pass Course in the Second Year is not permitted to attempt the work of an Honour Course in addition to his General Course.

134. In order to proceed in an Honour Course in the Second Year a candidate at the examination of the First Year (1) must have fulfilled the conditions of Section 112, (2) must, if his standing is deferred, have fulfilled the conditions of Section 117, and (3) in the case of non-matriculated students must have fulfilled the conditions of Section 32.

135. In order to proceed in an Honour Course in the Third Year, a candidate at the examination of the Second Year (1) must have fulfilled the conditions of Section 112, (2) must have complete First Year standing, and (3) must, if his standing is deferred, have fulfilled the conditions of Section 117. A candidate who fails to comply with these conditions must either repeat the Second Year of his Honour Course or, if transferred, proceed in the Pass Course of the Third Year, *i.e.*, he cannot in the Third Year take both the Pass Course and an Honour Course without the consent of the Council.

136. In order to proceed in a Special Course in the Fourth Year, a candidate at the examination of the Third Year, (1) must have fulfilled the conditions of Section 112, (2) must have complete Second Year standing, and (3) must, if his standing is deferred, have fulfilled the conditions of Section 117. A candidate who fails to comply with these conditions must repeat the Third Year of the Honour Course unless transferred to the Pass Course by the Council on the special report of the Board of Examiners.

Repeating the Year.

137. A student who has been granted standing in any year of the Pass Course may on conditions to be determined by the Council repeat that year in an Honour Course, and on obtaining standing, may proceed therein.

138. A candidate in any course who for any cause is debarred from the higher year, may repeat the whole examination in the following May, but is not eligible for scholarships, medals, or prizes.

IX. EXAMINATIONS.

139. No candidate will be admitted to examination unless the Head of the College in which he is enrolled certifies that he has complied with all the requirements of that College affecting his admission to such examination.

140. A candidate will not be admitted to an examination unless he has paid all the fees due from him. A candidate who fails to pay his examination fees on or before the fifteenth of March—the last day for receiving fees prior to the May examination—must pay an additional fee of one dollar.

141. A candidate who fails to send his "application for examination" by the day appointed for receiving such applications must pay an additional fee of one dollar.

142. No candidate in a course involving practical work in a laboratory will be admitted to examination if the Professor under whom his work is carried on reports that he has neglected his laboratory work or signally failed in the practical examinations.

The May Examination.

143. The May examination is held at the University and is open to candidates of all the Years in the Pass Course and in all the Honour Courses.

144. Arrangements will be made, whenever possible, to allow a graduate, who is engaged in teaching in Ontario and who desires to receive credit in subjects not taken during his undergraduate course, to take such examinations in his own locality.

145. If the time-table permits, a candidate may present himself for examination in subjects in which he has previously failed to receive credit.

146. In the case of Fourth Year candidates, where there is a conflict in the time-table, a special supplemental examination may be arranged.

147. A candidate for examination is required to send an application, according to a printed form, to the Registrar not later than the 15th of March.

The June Examination.

148. The June Examination, which is held at the University, and may be held at local centres as well, is exclusively for candidates for Senior Matriculation in the Pass Course.

149. A candidate for this examination is required to send an application according to a printed form to the Registrar not later than the 1st of May.

The September Supplemental Examination.

150. The September Supplemental examination is held at the University, and is open (1) to candidates who failed in subjects of the Pass Course at a previous examination, and (2) to candidates in any year of the Pass Course, who were prevented by sickness, domestic affliction or other causes beyond their control, from attending the May Examination. The latter candidates must prove to the satisfaction of the Council the sufficiency of the alleged cause of absence.

151. If feasible this supplemental examination will be held at Winnipeg, Regina, Saskatoon, Edmonton and Calgary. The candidate for whom such an examination is held must meet the expenses incurred and should make early application for the privilege.

152. A candidate for this examination is required to send an application according to a printed form, to the Registrar not later than the 1st of August.

The January Supplemental Examination.

153. The January examination is held at the University and is open to candidates who were awarded standing in the subjects of their course at the May or June examination and were prevented by sickness, domestic affliction or other causes beyond their control from attending the September examination. Such candidates must prove to the satisfaction of the Council the sufficiency of the alleged cause of absence.

154. A candidate for this examination is required to send an application, according to a printed form, to the Registrar not later than the 1st of December.

Local Senior Matriculation Examinations.

155. Local Senior Matriculation examinations will be held in June at such centres as may from time to time be authorized by the Council of the Faculty.

156. Applications for the establishment of such an examination in June must be made through the Registrar not later than the 1st of May.

157. The presiding examiner or examiners at a local Senior Matriculation examination will be appointed by the Council of the Faculty, and should, if necessary, be competent to conduct an examination in French or German Dictation.

158. The expenses in connection with such local Senior Matriculation examination must be met by the candidates at the centre or by the authorities of the school or college on whose application the examination is held.

159. The fee for the presiding examiner will be $5 per diem during the whole examination period.

THE ROLL OF SERVICE.

The first edition of the official Roll of Service of the University was published in December, 1917, and a supplement has recently been issued, containing new names, and additions and corrections regarding those already recorded. A final and enlarged edition is now being prepared, and the readers of this Calendar can give valuable assistance if they will send in memoranda concerning their friends giving full details. A limited number of copies of the Roll and Supplement are still available for distribution to applicants, free of charge. Communications should be addressed to the Editor, The Roll of Service, University of Toronto.

THE LIBRARY.

The University Library is contained in a building of its own, situated on the east side of the campus that lies to the south of the Main Building. All students who have paid a library fee to the Bursar of the University are entitled to the privileges of the Library. Besides Reading Rooms the building contains Departmental Studies, which may be used as study-rooms by honour students in the various branches in which the Professors hold seminary courses. The Library is opened at 8.45 every morning and remains open until 5.15 in the afternoon (6 p.m. during the second term). Books in ordinary use may not be taken out of the building during the daytime, but are lent for the night shortly before the hour of closing, to be returned the following morning before 10 o'clock. Books not in general demand may, on special application, be borrowed for a longer period. Failure to return a borrowed book at the proper time and other breaches of the regulations are punishable by fine or suspension from the privileges of the Library.

ROYAL ONTARIO MUSEUM.

ARCHAEOLOGY, GEOLOGY, MINERALOGY, PALAEONTOLOGY, ZOOLOGY.

Students of the University in all departments are recommended to avail themselves of the privileges of the Museum, which, although under separate control, is intimately connected with the work of the University.

The Museum is open on all week days from 10 a.m. to 5 p.m. The Admission is free to the public on Tuesday, Thursday and Saturday. On other days an admission fee of fifteen cents is charged.

By a resolution of the Board of Trustees all regular students of the University may be admitted free on all days of the week by presenting their card of registration.

RESIDENCES.

UNIVERSITY OF TORONTO.

Residence for Men.

By the generosity of Mr. and Mrs. E. C. Whitney and other friends, the University can now offer to some hundred and fifty men the peculiar advantages of residential life and excellent accommodation within its own grounds. The Residence, opened in November, 1908, consists of three Houses situated on the north side of Hoskin Avenue, opening upon a quadrangle, the fourth side of which is formed by Devonshire Place. They stand about two hundred yards to the north of University College and of the University Dining Hall and close to the University Gymnasium and Athletic Field. The buildings are known as the South, East, and North houses.

Each House contains twenty-four single rooms, one single suite, one double room and eleven suites, a suite comprising a study and two bedrooms. A large room in each building, with an open hearth and a library has been set aside as a common room. A lavatory with hot and cold shower baths is provided for every eight men. The buildings are heated by steam and lighted by electricity.

The University supplies the table, chairs, book-case, chiffonier, bed, mattress, pillows, linen and window shades for each room; it is prepared to furnish a drop-light for a nominal rental.

Each occupant is charged $3.00 room-rent per week, payable to the Bursar four weeks in advance. The charge for each single suite is $4.00 per week. These charges cover heat, light, house-service, house-laundry, and the use of the telephone. There is no separate dining hall connected with the Residence, but board may be obtained at the adjacent University Dining Hall.

Applications for rooms must be made in writing to the Secretary of the Residence Committee (address the Registrar's Office) and must be accompanied by a deposit of $5.00. This deposit will be returned if the application be not granted, but will be forfeited if a room is assigned to the applicant and not taken by him, unless notice of his refusal of the room be received by the Secretary in writing before September 22nd. It will be returned in full at the end of the College year if the room key be given back and the room and furniture left in a satisfactory condition. The following principles govern the allotment of rooms: (i) In order to be assigned a room in the Residence, either before or during the Session, a student must have obtained standing at the previous spring examination with not more than one condition against him. (ii) The rooms in each house will be distri-

buted among the various Faculties and Years. (iii) A limited number of rooms will be reserved for members of the incoming First Year until September 18th. (iv) Applications will be considered in order of priority.

The University lays down three general rules, designed to prevent hazing, the use of intoxicants and gambling. The students in each House shall elect a House Committee, which is entrusted by the University with the making and enforcing of any other needed rules and with the maintenance of order. A member of the Faculty resides in each House to act as friend and adviser to the men in residence.

UNIVERSITY COLLEGE.

Queen's Hall, Residence for Women, Nos. 4, 7, 9 Queen's Park, and 184 College Street.

Superintendent, Miss Louise I. Livingstone, B.A.

Accommodation is provided for one hundred and twenty-two students. The rate for the present session will be $7.00 per week, and these dues must be paid to the Bursar four weeks in advance. Applications for rooms must be made in writing and a deposit fee of $5.00 must accompany each application. This fee will be returned if the application is not granted or if it is withdrawn before the 15th of September. It will be returned in full at the end of the College course if the room is left in good condition and there are no breakages.

Applications from First Year students will be considered first, the other years in order of priority.

The students elect a house committee to assist the Superintendent in the maintenance of order and for the general welfare of the household.

VICTORIA COLLEGE.

Burwash Hall, Residence for Men.

The Residence buildings comprise one hundred and sixteen bed-sitting rooms, and in each house there is a common room with a large fire-place on the ground floor, while the Tutor's bedroom and sitting room are on the second floor. About fifteen bedrooms have fire-places, and in one house there are two suites each consisting of a bedroom and a study. The Hall, known as Burwash Hall, is capable of seating 200 persons at meals; used as a hall for lectures, it will seat about 800.

Should rooms be reserved for students during the term 1919-20, they will probably be rented at from $5.50 to $6.50 per week. This rate includes board in Burwash Hall.

Applications for rooms and all inquiries should be addressed to the Dean of Residence, Victoria College, Toronto, from whom further information may be obtained.

Residences for Women.

Comfortable accommodation is provided for the women students of Victoria College, in the three women's residences—Annesley Hall, the Annex, and at 113 Bloor St. W., which was opened last year under the auspices of the Women's Student Union. These furnish room for sixty-two, sixteen and twenty students respectively, and are all located near the College. House management is under graduates of schools of domestic science, and a trained nurse has the health of the students in charge.

Tennis, basketball, skating, hockey, a gymnasium, and shower baths provide opportunity for physical development.

Applications for rooms must be accompanied by a deposit fee of $10.00, which will be refunded if the application is withdrawn before September the first. Fees for the year range from $200 to $275, according to the location of the room, and are payable, half on the first of October, and half on the first of February. Students may use the laundry for an extra fee of one dollar a year.

For further information kindly write to the Dean of Residence, Annesley Hall, Queen's Park, Toronto.

WOMEN'S STUDENT UNION OF VICTORIA COLLEGE.

75 Queen's Park.

Head, Miss M. H. Skinner, B.A.

At the beginning of the Michaelmas Term of 1917, South Hall was opened as a Women's Student Union to serve as a centre for the semi-academic and the social life of the undergraduate and graduate women of Victoria College.

No undergraduates live at the Union but there is a bed-room which is rented to graduate students and a guest-room for the use of members. There is also a common-room, dining-room, library and rooms which are used for committee meetings, discussion groups, Bible study classes, etc. The Union is also available for larger meetings and for functions such as class-receptions which the men and women students give together.

Three meals a day are served at the Union at reasonable cost.

For graduates living in Toronto the annual due is $3.00; for those living out of the city $1.00. An annual fee of $4.00 is levied by the College on all women students of Victoria. Women undergraduates who are away from home and not in residence at Annesley Hall or its Annex may find rooms at 113 Bloor Street West, the house opened last Fall under the auspices of the Union. Others will find at South Hall a list of approved houses in which they may secure rooms.

Fees at 113 Bloor Street will range from $190.00 to $225.00. Students living at this house will take their meals at the Union.

Women students of Victoria College will enrol wth the Head of Union at the beginning of term.

TRINITY COLLEGE.

Trinity College provides residences for both men and women students. The men reside in Trinity College, in which there is accommodation for about 70 students. The women reside in St. Hilda's College and St. Hilda's Lodge, in which together accommodation for about fifty is provided.

Residence for Men.

Excellent accommodation for men is to be found in the residence set apart for their use. Several members of the staff are resident in the building. The students' living rooms are so arranged that two students may room together, or a student may have a room to himself, as may be preferred. Many of the rooms are planned so that the sleeping apartment may be curtained off from the larger room, with which it is connected by an archway, leaving a most comfortable study which, being free from bedroom furniture, may be made specially attractive. This arrangement is advantageous also from the point of view of health. The room rent varies considerably according to the size and location of the room selected. Details as to fees for room and board, which are maintained at the lowest rate consistent with first class service, will be sent on request. There is a students' common room, gymnasium—which is used also for basket-ball and boxing—a hockey rink, tennis courts, a large field for sports, and ample grounds surrounding the College buildings. College affairs affecting student life are arranged by the students themselves in the "College Meeting", which is formally organized and embraces all the students of the College under the chairmanship of the senior student, known as "Head of College".

Applications for rooms in College are to be made on a printed form provided for this purpose, and are received at any time after the 1st of January for the succeeding Michaelmas Term, being subject to withdrawal on written notice up to the 1st September. Most of the rooms, being furnished partly by the College and partly by the occupants, may be fitted up to suit the taste of the individual student. Further information, with blank forms of application, will be supplied on request being made to "The Provost, Trinity College, Toronto".

Residence for Women.

Exceedingly comfortable accommodation is provided for the Women Students of Trinity in St. Hilda's College and St. Hilda's Lodge, which are situated in the grounds of Trinity College, less than four minutes' walk from the lecture rooms. The buildings are well planned, with ample common rooms and very attractive living rooms for the students. The young ladies have their own tennis courts, and provision is made for basket-

ball in the gymnasium of Trinity College. The rooms are furnished and an entrance fee of $12 is charged in the first year to cover expenses of bedding and furniture. The houses are in charge of experienced ladies.

For information as to rates and the academic qualifications for admission, with blank form of application, address: "The Provost, Trinity College, Toronto". For other particulars regarding the residence, address: "The Principal, St. Hilda's College, Toronto".

ST. MICHAEL'S COLLEGE.

For Catholic students St. Michael's now offers all the advantages peculiar to a Catholic College.

Residence for Men.

There is accommodation for the men at St. Michael's College. Parents are most careful of the dangers and temptations to which students, away from home for the first time, are subjected. This is a point that St. Michael's chiefly considers, and she is in a position almost to guarantee that the student will be as safe in every way as if he were in his own home, in addition to receiving all the advantages of the University.

The residents are subjected to a reasonable rule with a view to careful supervision, and a solid moral and religious training. Constant and intimate intercourse between staff and student is a feature.

The health and development of body and mind is promoted by regulated hours of study and recreation. Opportunity is given for all kinds of athletic exercise. For terms and application, address "The Superior".

Residence for Women.

For women students, St. Joseph's Convent, St. Alban's Street, and Loretto Abbey College, 385 Brunswick Avenue, are providing residences to meet in every way the wishes of all. Address "The Superior".

STUDENTS' ADMINISTRATIVE COUNCIL.

The Students' Administrative Council has been entrusted by the Caput with supervision of the conduct of the students on the grounds of the University.

Any student who may be convicted of having taken part in a parade or procession through the city which has not been authorized by the police authorities after application by the Executive of the Students Executive Council will be severely disciplined.

UNIVERSITY COLLEGE WOMEN'S UNION.

85 St. George Street

Resident Head, Miss Margaret Wrong.

The Union contains a common room, library, dining rooms, and guest room for the use of members.

MEMBERSHIP—All women undergraduates of University College are members of the Union. Graduates may also belong. (For membership fee see Fees).

MEALS are by ticket at the following rates:

Breakfast (7 tickets)	$1.40
Luncheon (5 tickets)	1.15
Dinner (7 tickets)	2.10

REGISTRATION—All women undergraduates in University College are required to register with the Resident Head at the beginning of term.

BOARDING HOUSES—Women undergraduates who are away from home and not in residence in Queen's Hall must have their boarding houses approved by the Resident Head. Students who need such accommodation are asked to communicate with her by letter after August 1st.

HART HOUSE.

Hart House, the gift of the Massey Foundation, is the new Undergraduates' Union of the University of Toronto.

Hart House contains completely equipped clubrooms, including lounge rooms, reading, writing and games rooms and billiard room; guest rooms; the Hart House Library; Music Room; Lecture Hall; Dining Hall; the offices and classrooms of the Y.M.C.A.; gymnasia and swimming pool; and the Hart House Theatre.

All male students proceeding to a degree in the University are members of Hart House. An annual fee of $10 is imposed by the University, which covers the fee of the Students' Administrative Council, all club fees in connection with Hart House, and membership in the Athletic Association, including the medical examination.

Other male students in the University or in the affiliated or federated institutions may become members of Hart House on payment of the required fee.

Graduates are entitled to the full privileges of Hart House on payment of an annual fee of $10.

A group of rooms is set apart for the use of the Faculty Union. There is also a common room for the use of the graduates.

The Theatre will be under the management of the Player's Club of the University of Toronto, and is available for productions by any of the Dramatic Clubs within the University.

For further information, apply to the Warden of Hart House.

FEES.

All University fees, as also the fees of students enrolled in University College, are payable to the Bursar at his office in the Main University Building, between the hours of ten and one o'clock, except on Saturday.

The College fees of students enrolled in Victoria College are payable to the Fees Clerk of that College.

The College fees of students enrolled in Trinity College or St. Michael's College are payable to the Bursar of the College.

I. UNIVERSITY FEES.

Matriculated and non-matriculated students, proceeding to the degree of Bachelor of Arts and enrolled in University College, or Victoria College, or Trinity College, or St. Michael's College, may attend the lectures of University professors and lecturers in the Faculty of Arts without payment of fees, except those imposed for laboratory supplies, but such students must register in the University.

Ad Eundem Statum Fees.

For admission, by certificate, to Second Year.....$15.00
For admission ad eundem statum..... 10.00

Library Fees.

The annual fee..... $2.00

Every matriculated and non-matriculated student in attendance, proceeding to the degree of Bachelor of Arts, is required to pay at the time of the entry of his name with the Registrar the annual library fee.

No occasional or graduate student shall be admitted to the library save upon the payment of the annual fee.

Hart House and the Students' Administrative Council.

The annual fee.....$10.00

Every male student in attendance, proceeding to the degree of Bachelor of Arts, is required to pay to the Bursar at the time of the entry of his name with the Registrar the annual fee of ten dollars for the maintenance of Hart House and the Students' Administrative Council.

Women Students' Administrative Council Fee.

Every woman student proceeding to the degree of Bachelor of Arts is required to pay to the Bursar at the time of the entry of her name with the Registrar the annual fee of two dollars for the maintenance of the Women Students' Administrative Council.

Charges for Laboratory Supplies.

Charges for supplies shall include laboratory materials and instruments used by or for the student, and ordinary wear and tear of instruments, but not charges for waste, neglect and breakage, which are to be met out of a deposit to be fixed by the Professor.

COURSES.	SENIOR MATRIC.		FIRST YEAR.		SECOND YEAR.		THIRD YEAR.		FOURTH YEAR.	
	College Registration.	Laboratory Supplies.	College Registration.	Laboratory Supplies.	College Registration.	Laboratory Supplies	College Registration.	Laboratory Supplies.	College Registration.	Laboratory Supplies.
[1]General Course	45	..	40	..	40	..	40	5	40	5
General Course (Household Science)	45	..	40	..	40	9	40	10	40	10
[2]Philosophy	45	..	40	..	40	..	40	2	40	..
[3]Commerce and Finance	45	..	40	..	40	3	40	3	40	3
Mathematics and Physics	45	3	40	3	40	5	40	8	40	..
Physics	45	5	40	5	40	8	40	8	35	10
Astronomy and Physics	45	3	40	3	40	5	40	8	35	10
Natural and Physical Sciences	45	5	40	5	..	..	..	..	..	..
Biology	45	5	40	5	40	9	35	12	30	22
[4]Biological and Physical Sciences	45	5	40	5	40	6	35	10	30	20
[4]Physiological and Biochemical Sciences	45	5	40	5	40	6	35	10	30	20
Chemistry and Mineralogy I	45	5	40	5	40	5	35	13	35	10
[5]Chemistry and Mineralogy II and Chemistry	45	5	40	5	40	5	40	4	40	3
[5]Geology and Mineralogy	45	5	40	5	40	9	40	3	40	3
Household Science	45	5	40	5	40	11	35	15	30	20
Science for Teachers	45	5	40	5	40	9	35	14	30	20
[6]Any other Course	45	..	40	..	40	..	40	..	40	..

[1]The Laboratory Supply fee in the Third and Fourth Years is required only from those students who are taking the Household Science option.

[2]The Laboratory Supply fee is not required from students of St. Michael's College.

[3]The Laboratory Supply fee is required of students taking a Science as a General Course subject.

[4]The fees for the Faculty of Medicine are not included.

[5]The fees for Drawing and Assaying are not included.

[6]At present these courses are Classics, Greek and Hebrew, Oriental Languages, Modern Languages, English and History, Modern History, Political Science.

The annual supply charges for a student shall be according to the following table in which for convenient reference, the college fees for each year of the various courses are also included, reference being made to the annual fee if paid in October, and not by instalments, for the details of which see pages 61-62.

Examination Fees.

Students proceeding regularly to the B.A. degree.

For the June Senior Matriculation or January Supplemental Examination	$15.00
For each examination other than June and January	10.00
For each Supplemental examination	10.00

Teachers' Course, Occasional and Summer Session Students.

For examination in one subject of any year, each	5.00
Maximum fee	10.00

A candidate who fails to pay his University fees on or before the fifteenth of March—the last day for receiving fees prior to the May examination—must pay an additional fee of one dollar.

A candidate who fails to send his application for examination by the day appointed for the receipt of such applications must pay an additional fee of one dollar.

Degree Fees.

For the degree of B.A.	$10.00
For admission ad eundem gradum (B.A.)	20.00

Miscellaneous Fees.

For certificate of honour	$1.00

The fee for admission ad eundem statum, or for dispensation from attendance upon lectures, or for certificates of honour, must be paid at the time of application.

A candidate who fails to pay his University fees on or before the fifteenth of March—the last day for receiving fees prior to the May examination—must pay an additional fee of one dollar.

II. COLLEGE FEES.

A graduate in Arts who, during his undergraduate course, was enrolled in either University College, or Victoria College, or Trinity College, or St. Michael's College, may attend lectures free in the college in which he was so enrolled.

Every matriculated and non-matriculated student proceeding to the degree of Bachelor of Arts shall, on each year's enrolment in University College, or Victoria College, or Trinity College, or St. Michael's College, pay an enrolment fee according to the following table, which fee shall include all instruction for which fees are chargeable except laboratory supply charges and library fees:—

Table of Fees.

First Year:—

Matriculated Students—Any course, if paid in full in October $40.00

By instalments:—

First instalment, if paid in October 20.00
Second instalment, if paid in January 21.00

Non-matriculated Students—Any course, if paid in full in October 45.00

By instalments:—

First instalment, if paid in October 23.00
Second instalment, if paid in January 23.00

Second Year:—

Matriculated Students—Any course, if paid in full in October 40.00

By instalments:—

First instalment, if paid in October 20.00
Second instalment, if paid in January 21.00

Non-matriculated Students—Any course, if paid in full in October 45.00

By instalments:—

First instalment, if paid in October 23.00
Second instalment, if paid in January 23.00

Third Year:—

Chemistry and Mineralogy, Div. I, *or* Chemistry, *or* Biological and Physical Sciences, *or* Physiological and Biochemical Sciences, *or* Biology, *or* Household Science, *or* Science for Teachers.

If paid in full in October 35.00

By instalments:—

First instalment, if paid in October 18.00
Second instalment, if paid in January 18.00

Any other course, if paid in full in October 40.00

By instalments:—

First instalment, if paid in October 20.00
Second instalment, if paid in January 21.00

Fourth Year:—

Chemistry and Mineralogy, Div. I, *or* Chemistry, *or* Physics, *or* Astronomy and Physics.

If paid in full in October 35.00

By instalments:—

First instalment, if paid in October..... 18.00

Second instalment, if paid in January..... 18.00

Biological and Physical Sciences, *or* Physiological and Biochemical Sciences, *or* Biology, *or* Household Science, *or* Science for Teachers.

If paid in full in October..... 30.00

By instalments:—

First instalment, if paid in October..... 15.00

Second instalment, if paid in January..... 16.00

Any other course, if paid in full in October..... 40.00

By instalments:—

First instalment, if paid in October..... 20.00

Second instalment, if paid in January..... 21.00

Arts and Forestry—First, second, third, fourth, fifth, and sixth years. Annual fee, including tuition, library, laboratory supply, and one annual examination. The College fee in each of the first, second, and third years is $30:—

If paid in full in October..... 70.00

By instalments:—

First instalment, if paid in October..... 35.00

Second instalment, if paid in January..... 36.00

All the above fees are payable in advance. After October 31st, a penalty of $1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply. A student will not be admitted to any of the University lectures or laboratories who is in arrears for his fees.

The annual enrolment fee of a matriculated student taking under the regulations more than one honour course shall be $40 only.

The enrolment fee of a matriculated student attending lectures for one term shall be $20.

The enrolment fee for students receiving dispensation from attendance upon lectures in University College, or Victoria College, or Trinity College, or St. Michael's College, shall be $5 for each term, in addition to the University fee of $5. The payment of these fees entitles the student to supervision of "term work" prescribed in connection with his course.

III. FEES FOR OCCASIONAL STUDENTS, TEACHERS' COURSE.

"A course in laboratory work" means the continuous course of instruction in laboratory or practical work offered to students in any one year in any of the subjects in which laboratory work is or may be prescribed.

"A course of lectures" means the continuous course of instruction offered in any one year in any of the subjects in which instruction is or may be given.

Laboratory fees are divided into (a) Fees for practical instruction in the laboratory, (b) Charges for supplies, which are the same as for students proceeding to the degree. (See page 58).

The payment of fees shall not entitle any occasional student to be admitted to the laboratory work of a later year without having taken that of the earlier year or years, unless this requirement is dispensed with by the Council of the Faculty on the recommendation of the Professor.

The annual fee for an occasional student attending a course, or partial course, of lectures shall be as follows:—

Tuition Fees.

	For the Session	For the Term.
For a course in any one subject	$10.00	$5.00
For a course in more than one subject, each subject	9.00	5.00
Maximum Fee	45.00	23.00

Examination Fees.

For examination in one subject of any year, each	$5.00
Maximum examination fee	10.00

All instruction fees are payable strictly in advance.

UNIVERSITY COLLEGE WOMEN'S UNION.

The Annual Fee $4.00

Every woman student registered in University College as proceeding to the degree of Bachelor of Arts, is required to pay to the Bursar at the time of the entry of her name with the Registrar, the annual fee of four dollars for the maintenance of the Women's Union. A reduction will be made (*a*) in the case of those University College students who have paid four dollars for instruction in Athletics, and (*b*) in the case of graduates, and in these two cases the fee for the privileges of the Union will be reduced to three dollars.

PRIZES, MEDALS, SCHOLARSHIPS AND FELLOWSHIPS.

No candidate will be permitted to hold more than one scholarship; but any one who would, but for this provision, have been entitled to a second scholarship, will have his name published in the lists.

All undergraduate scholars must sign a declaration of intention to proceed to a degree in Arts in this University, and must attend lectures in one of the Colleges for the academic year immediately following such examination. The Senate, however, on the recommendation of the Faculty, may, upon satisfactory reasons being shown, permit such scholar to postpone attendance upon lectures for a year. If at the end of the year a further postponement is necessary, special application must again be made. In every such case the payment of the scholarship will likewise be postponed. The scholarships are paid in three instalments—on the fifteenth of November, the fifteenth of January and the fifteenth of March; and each scholar is required to send to the Registrar a certificate of attendance upon lectures at least three days before the date of each payment.

No scholarship or medal will be awarded to any candidate who has been placed lower than the first class in the department to which the scholarship or medal is attached.

When the letter "U" is prefixed, the award is made by the Senate of the University on the recommendation of the Council of the Faculty as the result of competition open to the students of all the Colleges. In all other cases the letter indicates the governing body by which the award is made:—the Council of University College by the letter "C", the Senate of Victoria College by the letter "V", and the Corporation of Trinity College by the letter "T".

With the exception of the Jean Balmer Scholarship in Science of the First Year and of the Glashan Medal in Mathematics, all honours awarded by the Senate on the recommendation of the Faculty are open to the students of all the Colleges.

The competition for a College scholarship, medal or prize is confined to the students registered in that College and shall be subject to such regulations as the College may from time to time determine.

PRIZES.

First Year.

ENGLISH.

V. The Class of 1902 Prize, the gift of Professor C. E. Auger, B.A., of the value of $10 to the student ranking highest in English of the General Course.

M. A prize of the value of $10 to the student ranking highest in English of the General Course.

Second Year.

ENGLISH.

C. The Alumnae Prize, the gift of the Toronto Alumnae of the value of $10 in books, to the student ranking highest in English Composition.

M. A Prize of the value of $10 to the student ranking highest in English of the General Course.

V. The Webster Prize, the gift of the late J. G. Hodgins, Esq., M.A., LL.D., I.S.O., of the value of $10, to the student ranking highest in English of the General Course.

HEBREW.

V. The Robert Johnston Prize, the gift of the Rev. Professor J. F. McLaughlin, B.A., B.D., of the value of $15, to the student ranking highest in Hebrew of the General Course.

PHILOSOPHY.

M. The Kernahan Prize of the value of $25, the gift of W. T. Kernahan, Esq., in memory of the late Rev. Gregory Kernahan, to the student ranking first in the examinations in Philosophy.

First and Second Years.

ENGLISH.

V. Two prizes, of the value of $10 each, will be awarded for the two best essays on a subject to be assigned by the Staff in the Department of English. Neither of these prizes will be granted twice to the same student.

Third Year.

ENGLISH.

V. The Hodgins Prize, the gift of the late J. G. Hodgins, Esq., M.A., LL.D., I.S.O., of the value of $12, to the student ranking highest in English of the General Course.

M. The Dockeray Prize of the value of $25 to the student ranking highest in English of the General Course.

ENGLISH BIBLE.

V. The Massey Bursaries, established by the late Hart A. Massey, Esq., one of $25 and one of $15, to the students ranking first and second at the examination in the English Bible.

PHILOSOPHY.

M. The Hanrahan Prize of the value of $25, the gift of W. T. Kernahan, Esq., in memory of the late John Hanrahan, Esq., to the student ranking first in the examinations in Philosophy.

HOUSEHOLD SCIENCE.

U. The Anna Howe Reeve Prize of the value of $25, the gift of Dr. R. A. Reeve, "in memory of a true helpmate, whose unselfishness enabled the donor the better to discharge his duty to his Alma Mater." The Committee of Award consists of the President of the University, Professor Laird and Professor Benson.

Fourth Year.

ENGLISH.

M. The Dockeray Prize of the value of $25 to the student ranking highest in English of the General Course.

FRENCH.

U. The Quebec Bonne Entente Prize, the proceeds from $1,000, the gift of the delegates from the Province of Quebec to the Bonne Entente Movement.

The Prize shall be awarded on the results of (*a*) an essay in French written on one of a number of subjects in the Examination Hall, (*b*) translation from English into French, (*c*) an oral test in which regard shall be had especially to facility in speaking, understanding and pronouncing French. The Prize shall be in money, and it is suggested that it be expended in acquiring a more perfect knowledge of French.

CANADIAN CONSTITUTIONAL HISTORY.

V. The Robertson Prize, the gift of W. J. Robertson, Esq., B.A., LL.B., of the value of $10. to the student ranking highest in Canadian Constitutional History.

CLASSICS.

T. The Prince of Wales' Prize, $18, for the highest first class honours in Classics.

T. MATHEMATICS.

The Prince of Wales' Prize, $18, for the highest first class honours in Mathematics.

NATURAL SCIENCE.

T. A prize of $15 for the highest first class honours in any graduating department of the Natural and Physical Sciences.

M. A prize of the value of $10 to the student ranking highest in Science (Natural and Physical).

MODERN LANGUAGES.

T. A prize of $15 for the highest first class honours in Modern Languages.

ENGLISH AND HISTORY.

T. A prize of $15 for the highest first class honours in English and History with either option.

MODERN HISTORY.

T. A Prize of $15 for the highest first class honours in Modern History.

PHILOSOPHY.

T. A Prize of $15 for the highest first class honours in Philosophy.

M. The M. J. O'Brien Prize of the value of $100, to the student ranking highest in the Department of Philosophy (St. Michael's College).

POLITICAL SCIENCE.

T. A Prize of $15 for the highest first class honours in Political Science.

GENERAL COURSE.

T. A Prize of $15 for the highest ranking in first class Standing in the General Course.

Third and Fourth Years.

BIBLICAL GREEK.

V. The Wallbridge Prize, the gift of the late A. F. Wallbridge, Esq., of the value of $10, to the student ranking first in Biblical Greek.

NEW TESTAMENT INTRODUCTION.

V. The Robert Wallace Prize, the gift of the Rev. Professor F. H. Wallace, M.A., D.D., of the value of $10, to the student ranking first in New Testament Introduction.

All the Years.

ENGLISH.

V. The Lily Denton Keys Prize of the annual value of $25, endowed by Mr. Norman A. Keys, B.A., as a memorial for his wife, Lily Denton, B.A., is open for competition among all the Arts undergraduates of Victoria College. The subject of the essay shall be "The Present Day Novel".

FRENCH COMPOSITION.

C. The Squair French Prose Prize, of the annual value of $10, endowed by Professor Squair, is open for competition among students in attendance upon lectures in University College. The award shall be made annually by the Council of University College on the recommendation of the teaching staff in French. The books awarded are to be chosen by the winner after consultation with the staff in French.

NEW TESTAMENT HISTORY.

V. The Ryerson Prize, the gift of the late J. G. Hodgins, Esq., M.A., LL.D., I.S.O., of the value of $12, to the student ranking first in New Testament History.

ORATORY.

V. The Michael Fawcett Prize of $40 is awarded annually for "the best extempore oration" on a subject to be assigned at the commencement of each college year by the trustees of the fund. This prize is open to all candidates on probation for the ministry of the Methodist Church.

GREEK.

T. A Prize of $20 for Greek Prose.

LATIN.

T. A Prize of $20 for Latin Verse.

T. A Prize of $20 for Latin Essay.

GREEK OR LATIN.

T. A Prize of $20 for an essay in English on some subject of classical study.

ENGLISH.

T. A Prize of $20 for an English Essay.

T. A Prize of $20 for an English Poem.

The subjects of these Trinity College Prizes will be posted on the College notice board.

V. The Driver Prize of $10 is awarded annually on the result of an examination held in September on the Septuagint and allied versions. The prize is to be open to undergraduate and graduate students.

MEDALS.

Second Year.

THE GENERAL COURSE.

U. The Governor-General's Silver Medal will be awarded to that candidate who, taking not less than seventy-five per cent. in this examination, takes also the highest aggregate of marks when the results of the First and Second Year examinations in this course are added together, such examinations having been taken in two consecutive calendar years.

The discretion of the examiners, as in the examination for the Governor-General's Gold Medal, shall apply also to this examination.

Fourth Year.

GENERAL PROFICIENCY.

U. The Governor-General's Gold Medal is intended for the encouragement of the study of English in those departments in which English is not an integral portion of the work of the third and fourth years and will be awarded to that candidate who, taking not less than sixty-six per cent. in English (as defined below), and not less than seventy-five per cent. in some one of the following honour departments:—(*a*) Classics, (*b*) Greek and Hebrew, (*c*) Oriental Languages, (*d*) Modern History, (*e*) Political Science, (*f*) Philosophy, (*g*) Mathematics, (*h*) Physics, (*i*) Biological and Physical Sciences, (*j*) Biology, (*k*) Chemistry and Mineralogy, (*l*) Geology and Mineralogy, (*m*) Physiological and Biochemical Sciences, (*n*) Household Science, (*o*) Physiology and Household Science,—shall also take the best aggregate mark in the two subjects.

English shall be understood to mean only the papers based on English courses 4*a*, 4*b* and 4*e*. The essays prescribed for Honour students are not taken into account in this award.

In order to obviate any unfairness arising from a different system of marking in different departments, the principle shall always be adopted of raising the marks of the best candidate in the first class of each department to the maximum, and those of the others in proportion, unless the examiners of any department report that the marks of the best candidate in their department are not of sufficient merit to be so raised.

The Registrar shall publish not only the name of the successful candidate, but also the names of all candidates who, by satisfying the above conditions, are eligible for the award.

V. The Prince of Wales' Gold Medal, endowed by His late Majesty King Edward VII, will be awarded to the student who ranks first in first class Standing in the General Course.

V. The Prince of Wales' Silver Medal, endowed by His late Majesty King Edward VII, will be awarded to the student who ranks second in first class Standing in the General Course.

V. The Governor-General's Silver Medal will be awarded to the candidate standing highest in Honour Modern English of the Fourth Year examination, provided he has taken First or Second Class in his Special Honour Department or First Class in the General Course at graduation, First Class Honour Men having the preference. In case such a candidate has already received the Governor-General's Gold Medal, the next in rank shall be eligible.

Honour Modern English shall be understood to mean only the papers based on English Courses 4*a* and 4*b*. The essays prescribed for Honour students are not taken into account in this award.

T. The Governor-General's Silver Medal will be awarded to the student taking the best degree, provided that first class Standing shall have been obtained in a Special or in the General Course.

CLASSICS.

C. The McCaul Medal (Gold), established in 1886 by the late W. H. C. Kerr, M.A., Gold Medallist in Classics of 1859, in memory of the Rev. John McCaul, LL.D., First Professor of Classics, and First President of University College. It was presented by Mr. Kerr from 1886 up to his death, and from 1891 to 1894, after his death, by his widow. Since then the donors have been in 1895 John Hoskin, K.C., LL.D., Chairman of the Board of Trustees 1906-1910; in 1896 Nicol Kingsmill, M.A., K.C., Classical Medallist of 1856; in 1897, A. M. Crombie, Esq., of Montreal, in memory of his brothers Ernestus Crombie, M.A., Gold Medallist in Classics of 1854, and Marcellus Crombie, M.A., LL.B., Gold Medallist in Classics of 1857; in 1898 and 1899 William Dale, M.A., Gold Medallist in Classics of 1871; in 1900 Professor Fletcher, Gold Medallist in Classics of 1872, and Professor Hutton; in 1901 Adam Carruthers, M.A., Gold Medallist in Classics of 1880; in 1902 W. S. Milner, M.A., Gold Medallist in Classics of 1881; in 1903 G. W. Johnston, Ph.D.; in 1904-1917 the Hon. Sir J. M. Gibson, M.A., LL.D., by whom it will be presented in 1920.

The winners of the McCaul Medal have been as follows:—

1886, W. P. Mustard, Ph.D.; 1887, E. O. Sliter; 1888, H. J. Crawford; 1889, H. J. Cody, D.D., LL.D.; 1890, James Colling; 1891, C. A. Stuart; 1892, F. W. Shipley, Ph.D.; 1893, F. B. R. Hellems, Ph.D.; 1894, J. H. Brown (*ob.*); 1895, W. T. F. Tamblyn, Ph.D.; 1896, Donald McFayden; 1897, R. O. Joliffe; 1898, Miss Florence E. Kirkwood; 1899, W. H. Alexander, Ph.D.; 1900, Miss Landon Wright; 1901, E. J. Kylie (*ob.*); 1902, E. H. Oliver, Ph.D.; 1903, A. G. Brown; 1904, W. H. Tackaberry (*ob.*); 1905, S. A. Cudmore; 1906, R. W. Hart; 1907, W. A. Rae; 1908, Miss C. M. Knight; 1909, A. G. Hooper; 1910, no award; 1911, C. N. Cochrane; 1912, C. H. Carruthers; 1913, H. V. Wrong (*ob.*); 1914, D. Breslove; 1915, H. R. Kemp; 1916, W. M. Hugill; 1917, Miss E. A. Sinclair; 1918, no award; 1919, Miss E. Harris.

V. The Edward Wilson Gold Medal, founded by the late Bishop Edward Wilson in memory of his son Edward Wilson.

V. The S. H. Janes Silver Medal.

MODERN LANGUAGES.

C. The Governor-General's Silver Medal.

V. The J. J. Maclaren Gold Medal.

V. The S. H. Janes Silver Medal.

POLITICAL SCIENCE.

V. The J. Reginald Adams Gold Medal in Political Science, established by Rev. and Mrs. G. K. B. Adams as a memorial of their son Lieut. J. Reginald Adams who died of wounds at Etaples, France, November 26th, 1917.

V. The J. Reginald Adams Silver Medal in Political Science, established by Rev. and Mrs. G. K. B. Adams as a memorial of their son Lieut. J. Reginald Adams who died of wounds at Etaples, France, November 26th, 1917.

PHILOSOPHY.

V. The E. J. Sanford Gold Medal.

V. The S. H. Janes Silver Medal.

MATHEMATICS.

V. The S. H. Janes Silver Medal in Mathematics.

PHYSICS.

U. The James Loudon Gold Medal, the gift of the local Committee for the Toronto Meeting of the American Association for the Advancement of Science. Awarded to the candidate ranking highest in first class honours.

ASTRONOMY AND PHYSICS.

U. The Royal Astronomical Society of Canada Gold Medal, awarded to the candidate obtaining the first place in first class honours.

NATURAL SCIENCE.

V. The G. A. Cox Gold Medal, the gift of Mr. Herbert C. Cox.

V. The S. H. Janes Silver Medal.

All the Years.

NATURAL SCIENCE.

U. The Cawthorne Medal, the gift of F. T. Shutt, M.A., awarded on the recommendation of the Natural Science Association.

SCHOLARSHIPS.

First Year.

CLASSICS.

C. The Moss Scholarship, of the value of $60, founded by subscription in honour of the late Hon. Chief Justice Thomas Moss.

V. The Robertson Scholarship, of the value of $50, the gift of Professor J. C. Robertson, M.A.

SEMITIC LANGUAGES *or* GREEK AND HEBREW.

T. The Pettit Scholarship, of the value of $40, with free tuition for three years, provided the scholar obtains first class honours at subsequent examinations.

ORIENTAL LANGUAGES.

V. The A. P. Misener Scholarship of the value of $25, the gift of the Rev. W. A. Potter, M.A., B.D., in memory of the late Rev. Professor Misener.

MODERN LANGUAGES.

C. The Edward Blake Scholarship, of the value of $60, the gift of the late Hon. Edward Blake, formerly Chancellor of the University.

POLITICAL SCIENCE.

U. The Bankers' Scholarship, of the value of $70, the gift of the Bank of Toronto, the Canadian Bank of Commerce, the Dominion, Imperial, Standard, and Traders Banks, and the Union Bank of Lower Canada. Only such candidates are eligible as have passed the examination of the First Year and as may undertake to proceed to graduation in the Department of Political Science. A special examination on some special text-book of history or finance will be held at the time of the Supplemental examination in September. This scholarship is not tenable with any other.

The prescribed text-books are as follows:—
1919: Gide, Principles of Political Economy.
1920: Clay, Economics for the General Reader.

MATHEMATICS AND PHYSICS.

U. The Alexander T. Fulton Scholarship, of the value of $60, the gift of the late Alexander T. Fulton, Esq.

NATURAL AND PHYSICAL SCIENCES.

U. The First Alexander T. Fulton Scholarship of the value of $50, the gift of the late Alexander T. Fulton, Esq.

U. The Second Alexander T. Fulton Scholarship, of the value of $40, the gift of the late Alexander T. Fulton, Esq.

U. The Third Alexander T. Fulton Scholarship of the value of $30, the gift of the late Alexander T. Fulton, Esq.

U. The Jean Balmer Scholarship in Science of the value of $50, the gift of Mrs. Jane Balmer in memory of her daughter Miss Jean Balmer, B.A. and in fulfilment of the wish expressed in the will of another daughter Miss Eliza M. Balmer, B.A.
This Scholarship is open for competition only to students registered in University College.

Second Year.

CLASSICS.

C. The William Mulock Scholarship, of the value of $60, the gift of the Hon. Sir William Mulock, M.A., LL.D., for many years Vice-Chancellor of the University.

V. A Scholarship of the value of $50.

T. The Hart-Moorhouse, of the value of $40, the gift of Alumni, commemorating Messrs. W. Hart and A. C. Moorhouse, who were drowned in their graduating year, 1906, to the student ranking highest in first class honours in Classics, or, failing these, in English and History with the classical option.

MODERN LANGUAGES.

C. The George Brown Scholarship, of the value of $60, founded in honour of the late Hon. George Brown.

ORIENTAL LANGUAGES.

V. A Scholarship of $50, the gift of Professor J. F. McLaughlin, B.A., B.D., and others.

PHILOSOPHY.

U. The John Macdonald Scholarship, of the value of $50, the gift of the late Hon. John Macdonald.

T. A Scholarship in Mental and Moral Philosophy, which entitles the holder to free tuition in the Third Year and in the Fourth Year, if he obtains first class honours in the Second and Third Year.

POLITICAL SCIENCE.

U. The First Alexander Mackenzie Scholarship, of the value of $75, the gift of the friends of the late Hon. Alexander Mackenzie.

U. The Second Alexander Mackenzie Scholarship, of the value of $50, the gift of the friends of the late Hon. Alexander Mackenzie.

T. A Scholarship in Political Science which entitles the holder to free tuition in the Third Year and in the Fourth Year, if he obtains first class honours in his Second and Third Year.

MATHEMATICS AND PHYSICS.

U. The William Mulock Scholarship, of the value of $60, the gift of the Hon. Sir William Mulock, M.A., LL.D., for many years Vice-Chancellor of the University.

PHYSICS.

U. The Edward Blake Scholarship, of the value of $45, the gift of the late Hon. Edward Blake, M.A., LL.D., ex-Chancellor of the University.

BIOLOGICAL AND PHYSICAL SCIENCES.

U. The Edward Blake Scholarship, of the value of $45, the gift of the late Hon. Edward Blake, M.A., LL.D., ex-Chancellor of the University.

(1) BIOLOGY AND (2) GEOLOGY AND MINERALOGY.

U. The Edward Blake Scholarship, of the value of $45, the gift of the late Hon. Edward Blake, M.A., LL.D., ex-Chancellor of the University.

CHEMISTRY AND MINERALOGY.

U. The Edward Blake Scholarship, of the value of $45, the gift of the late Hon. Edward Blake, M.A., LL.D., ex-Chancellor of the University.

In case one or more of the four foregoing scholarships is not awarded, the amount rendered available will be divided among the other scholars, but no award shall exceed $60.

Third Year.

CLASSICS.

C. The Moss Scholarship, of the value of $60, founded by subscription in honour of the late Hon. Chief Justice Thomas Moss.

MODERN LANGUAGES.

C. The Julius Rossin Scholarship, of the value of $60, the gift of the late Julius Rossin, M.A.

PHILOSOPHY.

C. The John Macdonald Scholarship of the value of $50, the gift of the late Hon. John Macdonald.

V. The George John Blewett Scholarship, of the value of $50, the gift of Mrs. G. J. Blewett in memory of the late Rev. Professor Blewett.

POLITICAL SCIENCE.

U. The First Alexander Mackenzie Scholarship, of the value of $75, the gift of the friends of the late Hon. Alexander Mackenzie.

U. The Second Alexander Mackenzie Scholarship, of the value of $50, the gift of the friends of the late Hon. Alexander Mackenzie.

MATHEMATICS AND PHYSICS.

U. A Scholarship of the value of $60, the gift of the Local Committee for the Toronto meeting of the American Association for the Advancement of Science. In awarding this scholarship, the theoretical and practical work in the department will be estimated in the proportion of three to one.

PHYSICS.

U. A scholarship of the value of $55, the gift of the Local Committee for the Toronto meeting of the American Association for the Advancement of Science.

BIOLOGICAL AND PHYSICAL SCIENCES.

U. The Daniel Wilson Scholarship of the value of $30, the gift of the late William Christie, Esq.

BIOLOGY.

U. The Daniel Wilson Scholarship of the value of $30, the gift of the late William Christie, Esq.

In case either of the two foregoing scholarships is not awarded, the amount rendered available will be given to the scholar in the other department.

CHEMISTRY AND MINERALOGY.

U. The Daniel Wilson Scholarship, of the value of $30, the gift of the late William Christie, Esq.

GEOLOGY AND MINERALOGY.

U. The Daniel Wilson Scholarship, of the value of $30, the gift of the late William Christie, Esq.

In case either of the two foregoing scholarships is not awarded, the amount rendered available will be given to the scholar in the other department.

Fourth Year.

HONOUR COURSE.

T. The Jubilee Scholarship of the value of $120, tenable for two years, was founded by the Society for the Propagation of the Gospel, and is awarded yearly to the most deserving Bachelor of the Year who has obtained at least second class honours. On admission to the scholarship a declaration must be signed by the holder that it is his purpose to complete the Divinity Course in Trinity College and to present himself as a candidate for Holy Orders. Should he fail to do so, he will be held bound to refund to the College such proceeds of the scholarship as he shall have received.

First and Third Years.

The McClure Scholarship of $45 will be awarded to the student of the First or Third Year Arts who takes the highest standing in First Year Hebrew at the University, and who is preparing for the study of Theology in Knox College.

In order to hold this scholarship a student must give attendance on the lectures of the session in which the scholarship is won, and must sign a declaration that it is his intention to enter the ministry of the Presbyterian Church in Canada, and to prosecute theological study in Knox College.

All the Years.

V. An endowment of $13,500, provided by a bequest of the late W. E. H. Massey, Esq., will furnish a number of additional scholarships which are awarded under the terms of the will in aid of deserving students.

T. The late Ven. Archdeacon Nelles, of Brantford, left $2,000 to Trinity College to be used for the assistance of students in Arts or Theology during their course in the College. Loans will be made from this fund, to be repaid by the students after the completion of their College course. There are also other funds from which similar loans will be made.

V. The Rowell Scholarships, one of $30 and one of $20, the gift of Mr. N. W. Rowell, K.C., M.P.P., and Mrs. Rowell, open to all students of Victoria College, will be awarded annually to the students ranking first and second in Church History.

V. The Hamilton Fisk Biggar Scholarships, of the value of $50 each, awarded on the results of the May examinations to the students standing first in the University in those courses, General or Special where no prizes or scholarships are now offered. Preference will be given to the students of the third year.

V. The Lincoln G. Hutton Scholarship of the value of $50, the gift of Mr. and Mrs. F. Hutton in memory of their son Lieutenant Lincoln G. Hutton who fell in action in France on December 18th, 1916.

"Industrial Canada" Prizes.

U. "Industrial Canada," the official publication of the Canadian Manufacturers' Association, offers two prizes of the value of $60 and $30 respectively, for the two best essays submitted on specified economic subjects.

1. The Prizes shall be awarded by the Council of the Faculty of Arts on the recommendation of the Department of Political Economy. The subjects shall be specified by the Staff of the Department of Political Economy, not later than March 10th in each year, and shall be forthwith submitted to the "Industrial Canada" Committee of the Canadian Manufacturers' Association for their approval, on receipt of which they shall be announced.

2. The Competition shall be open to all undergraduates of the University of Toronto, registered as in attendance on October 15th in each year, on which date the essay shall be sent to the Registrar.

3. The essays shall be approximately 3,500 words in length. The award shall be made by November 15th, and the prize essays shall be forwarded to "Industrial Canada" and shall become the property of that publication.

4. No award shall be made unless the staff of the Department of Political Economy is satisfied that the publication of the prize-winning essay will reflect credit on the University.

The subjects approved for competition in the year 1919 are as follows:

1. Prospects of Immigration into Canada after the War.
2. The Marketing of Farm Produce.
3. Employment and the War.
4. The Effect of Cold Storage upon Prices.
5. The Development of the Canadian Canning Industry.

The awards have been as follows: 1912. I.—W. J. Little; II.—R. Forsyth. 1913. C. S. McKee and R. S. Rodd, aeq. 1914. I.—No award; II.—W. McL. Clarke. 1915. I.—No Award; II.—A. W. Kennedy. 1916, 1917, 1918, no awards.

UNDERGRADUATE AND GRADUATE.

HISTORY.

U. The All Souls' Historical Essay Prize.

1. The Prize shall be called The All Souls' Historical Essay Prize.
2. It shall be of the value of one hundred and fifty dollars.
3. It shall be open to all undergraduate members of the University of Toronto, and to graduates who at the time of the awarding of the prize shall not have exceeded one year from the time of graduation.
4. It shall be awarded in every second year, beginning in 1910, and the subject shall be announced two years before the time of the award.
5. There shall be a choice of two subjects for the Essay—one to be taken from Ancient European History, and one from Mediæval or Modern European History.
6. The choice of subjects and the awarding of the prize shall be in the hands of an examining board—to consist of the President of the University of Toronto, the Professor of History in the University, and the Professor of Ancient History in University College; should any of these be unable to act, the remaining members of the Board shall be empowered to name a substitute

7. The Essay shall involve research work of an original nature, and no particular books or courses shall be prescribed.
8. If the examiners judge any essay to be worthy, it shall be published at the expense of the University.
9. The examining board shall have power to prescribe limits as to the length of the essay, and to draw up additional regulations for the administration of the prize, provided always that sections 3, 5 and 7 of these regulations remain unchanged.
10. If no essay of sufficient merit be forthcoming it shall be in the power of the examiners to withhold the prize for that term, and to recommend that the money be devoted to whatever purpose they judge most fit to encourage historical research.

Essays must be sent to the Registrar of the University on or before April 1, 1920; they must be accompanied by a motto or pseudonym, and by another and separate envelope containing the name of the candidate, the name of his college, and the month and year of his matriculation. Candidates are advised to have their essays typed, and to confine them to (approximately) 30,000 words.

The subject for 1920 is:—Emergency government in the Greek world and the Roman Republic *or* The adaptation of democratic governments to war conditions.

The awards have been as follows:—

1912—G. L. B. Mackenzie.
1914—W. F. Wallace.
1918—Miss M. G. Reid.

POLITICAL SCIENCE.

U. The Ramsay Scholarship in Political Economy of the value of $60, the gift of Mr. William Ramsay. The scholarship is open for competition to all graduates or undergraduates who have been placed in the first class in one of the Economic subjects of the Fourth Year in the honour department of Political Science; but not more than two years must have elapsed since the competitor passed the examination above specified. The award is made upon an essay, the subject of which must be some question in Economics or Finance, of interest to the commercial community in Canada, to be announced in May of each year and the competition closes on the 15th of September thereafter, by which date the essays must be in the hands of the Registrar of the University.

1919. Relation of the Standard of Living to the Cost of Living *or* Recent Changes in the Canadian Balance of Trade.

1920. Rural Transportation in its relation to Rural Life.
Authorities must be carefully stated in every case.

PHILOSOPHY.

U. The George Paxton Young Memorial Fellowship in Philosophy, of the value of $300, will be awarded in June, 1921. The holder must be a Bachelor of Arts who has taken an honour course in Philosophy. This scholarship is tenable for one year, and the holder must devote his whole time to the study of some topic falling under the general term Philosophy. He may pursue his studies either in the University of Toronto, or in some other University approved by the Council of the Faculty; but in either case he shall furnish to the Council of the Faculty such evidence as may from time to time be required that he is faithfully observing the conditions under which the scholarship was awarded. Applications must be in the hands of the Registrar on or before June 15th, 1921. Further particulars may be obtained from the Registrar.

Those who have held the Young Fellowship are:—1897, M. A. Shaw, B.A., Ph.D.; 1899, G. J. Blewett, B.A., Ph.D., (ob.); 1899, R. J. Richardson, B.A.; 1901, F. S. Wrinch, B.A., Ph.D.; 1903, Miss M. A. Downing, B.A.; 1905, J. I. Hughes, B.A.; 1907, W. T. Brown, B.A., Ph.D., 1911, J. S. Sanderson, M.A., Ph.D.; 1913, E. A. Bott, B.A.; 1915, C. A. Gowans, B.A.; 1917, no award.

SCIENCE.

U. The 1851 Exhibition Science Research Scholarship, of an annual value of £200, is awarded in alternate years by His Majesty's Commissioners for the Exhibition of 1851, on the recommendation of the Senate, to a student who has given evidence of capacity for advancing Science or its application by original research.

This Scholarship will be awarded in 1919.

The regulations of His Majesty's Commissioners are as follows:—

1. The Scholarships are intended, not to facilitate attendance on ordinary collegiate studies, but to enable students who have passed through a College curriculum and have given distinct evidence of capacity for original research, to continue the prosecution of Science with the view of aiding its advance or its application to the industries of the country.

2. The Scholarships are of £200 a year, and are ordinarily tenable for two years, the continuation for the second year being dependent on the work done in the first year being satisfactory to the Scholarships Committee.

3. A limited number of the Scholarships are renewed for a third year where it appears that the renewal is likely to result in work of scientific importance.

4. Candidates are recommended by the governing bodies of the Universities and Colleges to which Scholarships are allotted, and the recommendations are considered and decided upon by the Scholarships Committee.

5. The candidate must be a British subject.

6. The candidate must have been a *bona fide* student of Science in a University or College in which special attention is given to scientific study for a term of three years.

7. The candidate shall be eligible for a Scholarship, provided (1) that he has spent the last full academic year immediately prior to the time of nomination as a student in any faculty or scientific department of that institution by which he is nominated, or (2) that he has been a student of such institution for a full academic year ending within twelve months prior to the time of nomination and since ceasing to be a student of that institution has been engaged solely in scientific study.

The word "student" in the preceding regulation must be understood as comprehending one engaged in undergraduate or post-graduate work.

8. The candidate must indicate high promise of capacity for advancing Science or its applications by original research. Evidence of this capacity is strictly required, this being the main qualification for a Scholarship. The most suitable evidence is a satisfactory account of a research already performed, and the Commissioners will decline to confirm the nomination of a candidate unless such an account is furnished, or there is other equally distinct evidence that he possesses the required qualification.

9. A candidate whose age exceeds thirty will only be accepted under very special circumstances.

10. A Scholarship may be held at any University in England or abroad, or in some other institution to be approved of by the Commissioners. Every scholar is, in the absence of special circumstances, required to proceed to an institution other than that by which he is nominated.

11. The principal work of a scholar must be research in some branch of Science, the extension of which is important to the national industries.

12. Scholars are required to devote themselves wholly to the objects of the Scholarships, and are forbidden to hold any position of emolument.

13. Scholars are required to furnish reports of their work at the end of each year of the tenure of their Scholarships. At the expiration of each Scholarship the reports of the scholar are referred to an eminent authority on the subject treated of, who furnishes an opinion thereon to the Commissioners.

14. The Scholarship stipend is payable half-yearly in advance, but £25 is reserved from the fourth payment until the scholar has made a satisfactory final report.

The regulations adopted by the Senate are as follows:—

The departments, students of which shall be eligible to be candidates, are:—1. Bacteriology; 2. Biology; 3. Chemistry; 4. Chemistry (applied), 5. Engineering (chemical); 6. Engineering (electrical); 7. Engineering (mechanical); 8. Engineering (civil); 9. Engineering (mining); 10. Forestry; 11. Geology; 12. Mineralogy; 13. Pathology; 14. Physics; 15. Physiology.

A student shall not be deemed to be ineligible because of his being on the teaching staff of the University, if he has not been in receipt of a salary of more than $500 per annum and has not been on the teaching staff for more than two years from graduation.

A student shall be deemed to be eligible in the year in which he intends to graduate, but if nominated for the Scholarship his nomination shall be subject to his being successful in passing his examination for his degree.

The nomination of the candidate shall be made by a Board composed of seven members appointed by the Senate, and the Board shall consist of the Chancellor, the President, the Reverend Dr. Bowles, Mr. Featherstone Osler, the Honourable Mr. Justice Maclaren, the Honourable Mr. Justice Riddell and Mr. J. A. Worrell, and the Board shall have power to call to its aid as assessor any member of the teaching staff.

In the event of there being no suitable candidate, the Senate may recommend that a probationary bursary of £70 be awarded to a student who is not immediately qualified for a scholarship, but who gives promise of becoming so, after a year's experience of research work.

The regulations of His Majesty's Commissioners respecting probationary Bursaries are as follows:—

1. A Bursary is intended for the maintenance for one year of a student who proposes to become a Science Research Scholar under the scheme of the Commissioners at the expiration of the period covered by the Bursary, in order to afford him an opportunity of proving his power to carry on independent research. The authorities of an institution recommending a student for a Bursary will be presumed to have satisfied themselves that he *bona fide* intends to accept a Scholarship if subsequently appointed to one.

2. An applicant for a Bursary must, except as to evidence of capacity for original research, fulfil all the conditions for the time being laid down for appointment to a Science Research Scholarship. He must have passed

a B.Sc. examination (or its equivalent) with honours before the commencement of the period covered by the Bursary. His age must not exceed twenty-five, except under very special circumstances.

3. A Bursary is tenable for one year, and is of the value of £70, payable by half yearly instalments in advance, the second instalment being payable on the receipt of a certificate from the Professor under whom the holder has been working that he has faithfully performed his duties.

4. A Bursary will be awarded on condition that the nominating institution undertakes to provide for the holder facilities for conducting research, and the requisite supervision, free from charge and incidental expenses.

5. The holder of a Bursary shall devote himself exclusively to research and work preparatory to research, and none of his time shall be spent in assisting a teacher in his duties. The holder of a Bursary must not hold any other Bursary, Scholarship, or position of emolument.

6. The holder of a Bursary shall on or before 1st May in the year of tenure send to the office of the Commissioners an account of the research work performed by him, together with an application for appointment to a Science Research Scholarship. The Commissioners will expect to receive from the Professor under whom the holder of the Bursary shall have worked, a confidential opinion as to his capacity and qualifications.

7. The Commissioners may either appoint the holder of a Bursary to a Science Research Scholarship, or at their absolute discretion decline to appoint him, and in the latter case, shall not be called upon to state any ground for their decision.

8. A Science Research Scholarship, if granted, shall be held on the usual conditions attached to the Scholarships or on any special conditions which the Commissioners may impose. But a scholar who previous to appointment has held a Bursary shall not be eligible for exceptional renewal of his Scholarship for a third year.

The 1851 Exhibition Science Research scholars:—

F. J. Smale, B.A., Ph.D., 1892-93, 1893-94, 1894-95.

F. B. Kenrick, M.A., Ph.D., 1894-95, 1895-96, 1896-97

A. M. Scott, B.A., Ph.D., 1896-97, 1897-98.

W. G. Smeaton, B.A., Ph.D., 1898-99, 1899-1900

J. Patterson, B.A., 1900-01, 1901-02.

W. C. Bray, B.A., 1902-03, 1903-04.

E. F. Burton, Ph.D., 1904-05, 1905-06.

R. H. Clark, M.A., 1906-07, 1907-08.

C. S. Wright, M.A., 1908-09, 1909-1910.

W. P. Thompson, B.A., 1910-11, 1911-12.

A. J. Dempster, M.A., 1912-13, 1913-14

A. R. McLeod, M.A., 1914-1915 (Bursary).

1916, 1918, no awards.

The Rhodes Scholarship.

U. The trustees of the late Mr. C. J. Rhodes have assigned one of the Rhodes Scholarships to the Province of Ontario.

The following are excerpts from the regulations laid down by the trustees:—

The election of scholars in Canada under the Rhodes bequest will take place each year during the month of January. The scholars will begin residence at Oxford in October of the year for which they are elected.

Each scholarship is tenable for three years, and is of the value of £300 per annum.

Candidates shall be British subjects, and unmarried. They must have passed their nineteenth, but not have passed their twenty-fifth birthday, on October 1st of the year for which they are elected.

An elected scholar must have reached at least the end of his sophomore or second year's work at some recognized degree-granting University or College of Canada.

Candidates may elect whether they will apply for the Scholarship of the Province in which they have acquired any considerable part of their educational qualification, or for that of the Province in which they have their ordinary private domicile, home or residence. They must be prepared to present themselves for examination or election in the Province they select. No candidate may compete in more than one Province, either in the same or in successive years.

Only candidates who have passed an equivalent to the Oxford Responsions examination or those who are exempted from Responsions by the Colonial Universities' Statute, are eligible for election.

As the University of Oxford has admitted this University to the privileges of a Colonial University, a student who has completed the first and second years with Greek as an optional subject is admitted to advanced standing at Oxford, and is excused from Responsions.

In accordance with the wish of Mr. Rhodes, the trustees desire that "in the election of a student to a scholarship, regard shall be had to (i) his literary and scholastic attainments, (ii) his fondness for and success in manly out-door sports, such as cricket, football, and the like, (iii) his qualities of manhood, truth, courage, devotion to duty, sympathy for and pro-

tection of the weak, kindliness, unselfishness and fellowship, and (iv) his exhibition during school-days of moral force of character, and of instincts to lead and to take an interest in his schoolmates." Mr. Rhodes suggested that (ii) and (iii) should be decided in any school or college by the votes of fellow-students, and (iv) by the head of the school or college.

Additional information will be furnished to intending candidates on application to the President of the University.

The election of a Rhodes Scholar by this University will take place in January, 1919.

The Rhodes Scholars:—

1904: E. R. Paterson, B.A., University College. (ob.)

1906: R. C. Reade, B.A., University College.

1908: W. K. Fraser, B.A., University College.

1910: A. L. Burt, B.A., Victoria College.

1913: C. H. Carruthers, B.A., University College.

1915: A. K. Griffin, B.A., Trinity College.

U. Tutorial Fellowships in Mathematics, Chemistry and Biology, of the annual value of $500 each, are awarded annually. The selection is made from among graduates of the University. Each Fellow is appointed annually; but he may be reappointed for a period not exceeding, in all, three years.

Each Fellow is required to assist in the teaching and practical work of his department, under the direction of the professor or lecturer. The Fellows are selected with a special view to their aptitude for teaching and their attainments in the department in which the appointment is to be made. Every Fellow on accepting his appointment comes under an obligation to fulfil the duties of his Fellowship during the academic year in which he is appointed, unless specially exempted.

In the Departments of Psychology, Physics, Biology, Physiology, Chemistry and Mineralogy a number of Assistant Demonstrators and Class Assistants are appointed annually, whose appointments are made subject to the same conditions as those governing the Tutorial Fellowships. The annual remuneration attached to these positions varies according to the extent of the duties assigned to the appointees.

Candidates for the Fellowships must send their applications annually to the Registrar, not later than the first day of June.

THE McCHARLES PRIZE.

This prize was established in connection with the bequest of the late Æneas McCharles of Provincial Government bonds of the value of $10,000, and is awarded on the following terms and conditions, namely, that the interest therefrom shall be given from time to time, but not necessarily every year, like the Nobel prizes in a small way: (1) To any Canadian from one end of the country to the other, and whether student or not, who invents or discovers any new and improved process for the treatment of Canadian ores or minerals of any kind, after such process has been proved to be of special merit on a practical scale; (2) Or for any important discovery, invention or device by any Canadian that will lessen the dangers and loss of life in connection with the use of electricity in supplying power and light; (3) Or for any marked public distinction achieved by any Canadian in scientific research in any useful practical line. The following conditions, as passed by the Board of Governors, determine the method of award:—

(1) The title shall be the McCharles Prize.

(2) The value of the prize shall be One Thousand Dollars ($1,000.00) in money.

(3) The term "Canadian" for the purpose of this award shall mean any person Canadian born who has not renounced British allegiance; and for the purpose of the award in the first of the three cases provided for by the bequest, domicile in Canada shall be an essential condition.

(4) Every candidate for the prize shall be proposed as such in writing by some duly qualified person. A direct application for a prize shall not be considered.

(5) No prize shall be awarded to any discovery or invention unless the same shall have been proved to the satisfaction of the awarding body, to possess the special practical merit indicated by the terms of the bequest.

(6) The order of priority in which the three cases stand in the wording of the bequest shall be observed in making the award; that is, the award shall go *caeteris paribus* to the inventor of methods of smelting Canadian ores; and, failing such inventions, to the inventor of methods for lessening the dangers attendant upon the use of electricity; and only in the third event, if no inventors of sufficient merit in the field of metallurgy and electricity present themselves, to the inventor distinguished in the general field of useful scientific research.

(7) The first award was made in 1910.

(8) The composition of the awarding body shall be as follows:—

An expert in Mineralogy,

An expert in Electricity,

An expert in Physics,

and four other persons. All of the members of this body shall be nominated by the Board of Governors of the University of Toronto.

THE PEARSON KIRKMAN MARFLEET LECTURESHIP.

In November 1910, Mrs. Lydia A. Marfleet, of Prophetstown, Illinois gave the sum of $5,000 to found a lectureship in the University of Toronto, to be called, in memory of her late husband, the Pearson Kirkman Marfleet Lectureship.

The Governors accepted the trust, and have established and agreed to maintain the lectureship in perpetuity.

The Governors have undertaken to appoint at least once in every four years some person or persons to deliver a course of lectures in the University of Toronto on this foundation; and as the late Pearson Kirkman Marfleet, an American citizen, devoted constant thought to the public welfare of his own country, and also watched the growth of the Dominion of Canada with profound interest, the Governors have further undertaken that such person or persons as may from time to time be appointed shall, as far as possible, be chosen with regard to their special ability to set forth some phase or phases of the national movements of each or both countries.

The first course of lectures under this foundation was delivered on February 10th, 11th and 12th, 1915, by the Honourable William Howard Taft, Ex-President of the United States.

UNIVERSITY OF OXFORD.

A student of this University who has completed two years of the course in Arts may be admitted to the status of a Junior Colonial Student at the University of Oxford, while a student who has completed three years, and has taken honours in the final examination or who has obtained second class honours in the Third or Fourth Year, may be admitted as a Senior Colonial Student. In each of these cases, on complying with certain conditions, a student may obtain his degree at Oxford in two years.

A student of this University, who has passed the examination in Greek of the Second or the Third or the Fourth Year is exempt from the examination in Greek, which is compulsory for all candidates for degrees in Arts in the University of Oxford.

UNIVERSITY OF CAMBRIDGE.

The University of Toronto is affiliated to the University of Cambridge and matriculated students who have passed the examinations of the First and Second Years are entitled to admission to the privileges of affiliation, which enable a student to take his degree at Cambridge without completing the full period of residence.

COURSES OF INSTRUCTION

The members of the staff indicated under the headings "The Classics", etc., in the following pages, are those of the Session 1918-1919.

THE CLASSICS

THE UNIVERSITY OF TORONTO:

A. J. BELL, B.A., PH.D.....*Professor of Comparative Philology.*

UNIVERSITY COLLEGE:

MAURICE HUTTON, M.A., LL.D.....*Professor of Greek.*
A. CARRUTHERS, M.A....*Professor of Greek Literature and Archaeology.*
W. S. MILNER, M.A.....*Professor of Greek and Roman History.*
G. OSWALD SMITH, M.A.....*Assistant Professor of Latin.*
E. A. DALE, M.A.....*Assistant Professor of Latin.*
D. DUFF, M.A., B.D.....*Lecturer in Latin.*
A. GRANT BROWN, M.A.....*Lecturer in Ancient History.*
C. N. COCHRANE, B.A.....*Lecturer in Ancient History.*
W. D. WOODHEAD, M.A.....*Lecturer in Latin.*
W. G. HARDY, B.A.....*Lecturer in Latin.*

VICTORIA COLLEGE:

A. J. BELL, B.A., PH.D.....*Professor of Latin.*
J. C. ROBERTSON, M.A.....*Professor of Greek.*
A. L. LANGFORD, M.A.....*Professor of Greek.*
N. W. DEWITT, B.A., PH.D.....*Professor of Latin.*
C. B. SISSONS, B.A.....*Associate Professor of Ancient History.*

TRINITY COLLEGE:

REV. H. T. F. DUCKWORTH, M.A.....*Professor of Ancient History.*
E. T. OWEN, M.A.....*Professor of Greek.*
G. S. BRETT, M.A.....*Professor of Ethics and Ancient Philosophy.*
W. A. KIRKWOOD, M.A., PH.D.....*Professor of Latin.*
J. N. WOODCOCK, M.A.....*Lecturer in Classics.*
J. H. MOZLEY, M.A.....*Lecturer in Classics.*
REV. A. HAIRE FORSTER, B.A., B.D.....*Lecturer in Greek.*
MISS M. M. WADDINGTON, M.A.....*Reader in Classics.*

ST. MICHAEL'S COLLEGE:

REV. HENRY CARR, B.A.....*Professor of Greek.*
REV. R. MCBRADY.....*Professor of Latin.*
REV. J. T. MUCKLE, M.A.....*Associate Professor of Greek.*
REV. F. G. POWELL .....*Associate Professor of Latin.*
M. M. CLARE, B.A. .....*Lecturer in Latin.*

N.B.—The following books are recommended for the use of all students taking work in the Classical Department: Dictionaries: Greek—Liddell and Scott's Greek-English Lexicon (unabridged or intermediate size); Latin—A Latin Dictionary—Lewis and Short (unabridged or intermediate size); Grammars: Greek—Goodwin's Greek Grammar; Latin—Allen and Greenough's or Gildersleeve and Lodge's Latin Grammar; Histories of Literature; Greek—Gilbert Murray's or Wright's; Latin—Mackail's Latin Literature; Atlases: Murray's Classical Atlas or The Atlas of Ancient and Classical Geography in Everyman's Library.

GREEK.

PASS COURSES.

1*a*. Translation at sight of passages of ordinary difficulty from Xenophon's historical works; Greek Grammar (including sentences to test accidence and syntax); Greek Prose Composition, North and Hillard, Exercises A, pages 1-85; Bell's Second Greek Reader. Four hours a week.

1*b*. First Greek Book (White).

(This course may be taken only by those specially recommended by their College, and the course must be continued through all four years.)

2*a*. Translation at sight of easy passages of Greek; Greek Grammar; translation from English into Greek of sentences based on North and Hillard Greek Prose Composition, pages 1-155 inclusive; Homer, Iliad XXII., and passages from Homer in Rennie's Selections; Plato, Apology. Four hours a week.

2*b*. Salamis (Edwards); Greek Reader (Freeman and Lowe); Translation at sight. (This course will not be given until the Session 1920-21).

3*a*. Translation at sight of easy passage of Greek; Greek Grammar; Sophocles, Antigone; Aristophanes, Birds; Grant, Age of Pericles. Two hours a week.

3*b*. Selections from Plato (Purves); Translation at Sight. To be read in English: additional prescribed portions of Plato; Thucydides, Pericles' Funeral Speech; Demosthenes, Philippie I. Dickinson, Greek View of Life; Grant, Age of Pericles. (This course will not be given until the Session 1921-22).

4*a*. Translation at sight of easy passages of Greek; Greek Grammar; Plato, Gorgias; Butcher, Aspects of Greek Genius, Chaps. 1 and 2, and Harvard Lectures, Chaps. 1, 2, and 3. Two hours a week.

4*b*. Homer Iliad I., 1-350, VI., 237 to end, XXII.; Odyssey, VI. and IX.; Sophocles, Œdipus Rex; Translation at sight. To be read in English: Sophocles, Antigone; Euripides, Medea; Aristophanes, Birds. Butcher, Aspects of Greek Genius, Chaps. 1 and 2, and Harvard Lectures, Chaps. 1, 2 and 3; Livingstone, Greek Genius; Jebb, Classical Greek Poetry. (This course will not be given until the Session 1922-23.)

HONOUR COURSES.

1*c*. *Classics:* Greek Grammar; translation at sight; Greek prose composition; Plato, Apology; Homer, Iliad XVIII., XXII.-XXIV.; Thucydides, IV. Five hours a week.

1*d*. *English and History:* The same as (*c*), omitting Thucydides IV., 42 to end.

1*e*. *Greek and Hebrew:* The same as (*c*).

1*f*. *Philosophy, English and History:* Greek Prose Composition, Plato and Thucydides, as in (*c*).

2*c*. *Classics:* Greek Grammar; translation at sight; Greek prose composition; Sophocles, Antigone; Demosthenes, Philippic I, Olynthiacs I., II., III.; Theocritus, Idylls I., VII., VIII., XIII., XV., XXI.; Aristophanes, Birds; Thucydides, I. Five hours a week.

2*d*. *English and History:* The same as (*c*), omitting Greek Grammar, Theocritus, and Thucydides.

2*e*. *Greek and Hebrew.* Translation at sight, Sophocles, and Thucydides, as in (*c*). Two hours and a half a week.

2*f*. Hellenistic Greek: Selections from the Septuagint (Conybeare and Stock.) One hour a week.

3*c*. *Classics:* Greek Grammar; Greek prose composition; translation at sight; Euripides, Bacchae; Sophocles, Œdipus Rex; Aristophanes, Clouds; Herodotus, VII., VIII., IX.; Thucydides, II., and III.; Plato, Republic I. to IV.; Aristotle, Ethics I. to IV., and X., Chaps. 6 to 9; Ancient Philosophy including (*a*) Greek speculative theories before Socrates; (*b*) Socrates and his contemporaries; (*c*) the doctrines of Plato and Aristotle; elementary course with special reference to prescribed texts. In addition to the Greek texts here prescribed, the student should read Grote, History of Greece, Chaps. LXVII. and LXVIII.; and Cushman, Beginner's History of Philosophy, or Rogers, Students' History of Philosophy. Nine hours a week.

3*d*. *English and History:* Plato, as in (*c*).

3*e*. *English and History* (*Special Option*)*:* Aristotle, as in (*c*).

3*f*. *Greek and Hebrew:* Plato, Aristotle, and History of Greek Philosophy, as in (*c*).

3*g*. Hellenistic Greek; Grammar and Philology; The Septuagint, Judges; New Testament, Acts, 13-28.

3*h*. Essays on prescribed topics.

4*c*. *Classics:* Greek prose composition; translation at sight; Thucydides, V. to VIII.; Plato, Republic; Aristotle, Ethics, Book X., Chaps. 6 to 9; Aristotle, Politics I., Chaps. 1 to 7; II, Chaps. 5, 7, 8, 9; V.; a survey of Greek Philosophy from Socrates to Aristotle (Windelband, History of Ancient Philosophy); Æschylus, Agamemnon; Aristophanes, Frogs; Aristotle, Poetics, with the history of the Greek genius and Greek poetry so far as covered by the following books:—Butcher's Aspects of Greek

Genius (2nd edition) and Harvard Lectures, Matthew Arnold's Essay on Translating Homer, Butcher's essays in his edition of the Poetics, Jebb's Classical Greek Poetry, Moulton's Ancient Classical Drama. Seven hours a week.

4*d*. *English and History:* Aristotle, Poetics (with books) as in (*c*).

4*e*. *English and History* (*Special Option*): Plato, Republic as in (*c*).

4*f*. *Greek and Hebrew:* Plato, Republic; History of Philosophy with special reference to Philo, Neo-Platonism, and the Stoicism of the Empire.

4*g*. Hellenistic Greek: Grammar and Philology; Selections from Wisdom Literature; New Testament, Hebrews.

4*h*. A course of reading to be approved by the Department, with essays on prescribed topics.

LATIN.

PASS COURSES.

1*a*. Translation at sight of an easy prose passage; translation into Latin of sentences based on the prescribed Cicero; questions on grammar and prosody, and on the subject-matter of the texts; Caesar, *Bellum Gallicum* V. chap. 24 to end; Cicero, *Pro Lege Manilia;* Selections from Ovid (Gleason, omitting No. IV).

NOTE.—Candidates who have not matriculated, or whose last examination in Latin was prior to 1918, cannot join this class without previously satisfying the instructors as to their ability to profit by the instruction given.

2*a*. Translation at sight; translation into Latin of sentences to illustrate Latin syntax; translation into Latin of simple narrative based on the prescribed Livy; Livy, Book I., and selections from Books II.-X., Dennison (60 pages); Catullus (Simpson); questions on grammar and prosody and on the subject matter of the texts. Four hours a week.

3*a*. *Course for* 1919-1920: Latin Grammar; Latin Prose Composition; Sight Translation; Tacitus, Agricola; Horace, Epistles, Book I.; selections from Gillies and Cumming's "Latin of the Empire"; Juvenal, Satires I., III., X.; Pliny, The Death of the Elder Pliny, The Eruption of Vesuvius, The Treatment of the Christians. Two hours a week.

3*a*. *Course for* 1920-1921: Latin Grammar; Latin Prose Composition; Sight Translation; Cicero, Pro Archia; Virgil, Eclogues I. and IV., Aeneid VI.; selections from Gillies and Cumming's "Latin of the Empire"; Quintilian, Estimate of Latin Writers; Seneca, The Choice of Books, The God Within Us; Lucan, The Causes of the Civil War; Martial, Country Life, To his Book, To Quintilian, The Day in Rome, A Suburban Villa, The Schoolmaster's Neighbour, The Happy Life, Bilbilis and Rome, To His Townsmen, To Juvenal; Statius, To Sleep; Ausonius, The Moselle; Claudian, Imperial Rome, The Old Man of Verona; Rutilius Namatianus, Farewell to Rome; Tiberianus, A Country Scene. Two hours a week.

4*a*. *Course for* 1919-1920. The same as 3 (*a*). Two hours.

NOTE 1. Students of the Fourth Year, who have not passed in the Latin of their Third Year, will be required, at the B.A. examination of 1920, to take an additional paper on the work of the alternative course.

NOTE 2. Students of the Fourth Year, who through absence from the University, have not taken the two Latin courses in consecutive years, will, at their Final Examination, be required to take the paper on the authors prescribed in 3 (*a*), which they did not take in their Third Year.

HONOUR COURSES.

1*b*. *Classics:* Latin Grammar, including prosody; Latin Prose Composition; Sight Translation; Virgil, Georgics IV., Aeneid VI. (Sidgwick or Page); Catullus (Simpson); Horace, Selections from the Odes not read at Matriculation; Cicero, Pro Murena, Pro Archia, Philippic II. The paper on grammar will be based largely on the prescribed authors; the papers on the texts will include questions on the contents, style, and literary history of the books. Four to five hours a week.

1*c*. *English and History* (*Classical Option*): The same as (*b*).

1*d*. *English and History* (*Moderns Option*): Latin Prose Composition; Virgil, Æneid VI.; Cicero, Philippic II. Three hours a week.

2*b*. *Classics*: Latin Grammar; Latin Prose Composition; Sight Translation; Tacitus, Annals, Books I. and II.; Livy, Books I. and VI.; Virgil, Eclogues; Plautus, Trinummus; Terence, Andria; Martial, Select Epigrams; Horace, Epistles; Sellar, The Roman Poets of the Republic. Five to six hours a week.

2*c*. *English and History:* The same as (*b*), omitting Latin Grammar, Terence, and Martial.

3*b*. *Classics:* Latin Grammar; Latin Prose Composition; Sight Translation; Horace, Satires; Persius, Satire V.; Juvenal, Satires I., III., V., VII., VIII., X., XIII.; the history of Roman Satire.

Tibullus I., 1 and 3, II., 1 and 5 (Postgate); Propertius I., 1, 2, 8, II., 13*b*, 31, 34, III., 1, 3, 7, 9, IV., 2, 6, 11 (Postgate); Virgil, Aeneid, Books I-VI.; Lucretius, Book V.

Cicero's Letters (Watson), Books I and II; Caesar, Civil War, Book I.

Tacitus, Annals, Books III. to VI. (Furneaux, large edition); Monumentum Ancyranum (Mommsen); reign of Tiberius and introduction to the history of the principate (Merivale, The Romans under the Empire, Vols. III., IV., and V.; Boissier, Tacitus). Six hours a week.

3*c*. *English and History* (*Special Option*): Cicero's Letters (Watson), Books I. and II.; Caesar, Civil War, Book I.

3*d*. Essays on prescribed topics.

4*b*. *Classics:* Latin Prose Composition; Sight Translation; Virgil, Aeneid, with questions in Virgilian criticism.

Horace, Ars Poetica, and Quintilian, Book X., with questions on the history of Roman literature.

Lucretius III; Stoic and Epicurean Philosophy.

Cicero's Letters (Watson); Sallust, Catiline; Caesar, Civil War; Roman constitutional history from the death of Sulla to the death of Cicero (Mommsen, Book V.; Ferrero). Five hours.

4*c*. *English and History*: Cicero's Letters (Watson); Sallust, Catiline; Caesar, Civil War. Two hours.

4*d*. A course of reading to be approved by the Department, with essays on prescribed topics.

GREEK AND ROMAN HISTORY.

1. General History of Greece to 146 B.C. General History of Rome to A.D. 476 (Goodspeed, History of the Ancient World; Kimball, Bury's Student's History of Greece; Pelham, Outlines of Roman History). The course aims at a simple outline of the general historical movement in the Græco-Roman world and at an appreciation of the most characteristic features of this Mediterranean civilization.

2*a*. Greek History to 454 B.C.; Grote (Mitchell and Caspari), Chaps. I. to XV.

2*b*. Roman constitutional and political history to B.C. 264:—the city state, criticism of the regal period, the revolution of 509, the struggle between the orders, the conquest and organization of Italy. Mommsen, Books I. and II.; Taylor, Constitutional and Political History of Rome; Warde Fowler, The City State. Fustel de Coulanges, La Cité antique, omitting those portions of the book which deal with Greek history. Classical students are recommended to purchase Mommsen complete early in their course, but How and Leigh's History of Rome (cc. i-xvii.) covers this period satisfactorily.

3*a*. A more mature study of Greek History, based upon Thucydides, Herodotus and Plutarch (Everyman's Library); and an examination of the influence of Greece on Rome.

3*b*. Greek history from B.C. 454 to B.C. 399; Grote (Mitchell and Caspari) Chaps. XVI. to XXI.; Zimmern, The Greek Commonwealth; historical questions on the prescribed Thucydides.

3*c*. Roman history from B.C.264 to B.C. 78, *i.e.*, the period of foreign conquest and the beginning of the Revolution; Mommsen, Books III. and IV.; Taylor, Constitutional and Political History of Rome.

4*a*. The causes, social, economic and political, of the fall of the Roman Republic; and the history of the Roman Empire to the death of Justinian.

4*b*. General questions on Greek history.

4*c*. Roman constitutional and political history from the death of Sulla to the death of Cicero; Mommsen, Book V., Ferrero.

4*d*. Roman Institutions: Greenidge, Roman Public Life; Warde Fowler, The religious experience of the Roman People; Deloume, Les Manieurs d'argent à Rome.

ORIENTAL LANGUAGES.

UNIVERSITY COLLEGE:

J. F. MCCURDY, PH.D., LL.D.....*Professor Emeritus.*
W. R. TAYLOR, PH.D.....*Professor.*
J. A. CRAIG, M.A, PH.D., D.D.....*Professor.*

VICTORIA COLLEGE:

J. F. MCLAUGHLIN, B.A., B.D.....*Professor.*
S. H. HOOKE, M.A., B.D.....*Professor.*
W. A. POTTER, M.A., B.D.....*Lecturer.*

TRINITY COLLEGE:

REV. F. H. COSGRAVE, B.A., B.D.....*Professor.*
W. ROLLO, M.A.....*Lecturer.*

1*a*. *General Course.* A course in the history of the Hebrew people from the Exodus to 586 B.C.; a literary study of the books of Amos, Hosea, Isaiah and Micah. One hour a week.

1*b*. *General Course.* Hebrew Grammar; translation from Hebrew into English of Gen. 1-4, 18; Pss. 1, 8, 24; translation from English into Hebrew. Davidson's Hebrew Grammar; Kittel's Biblia Hebraica. Four hours a week.

2*a*. *General Course.* A course in the history of the Hebrew people from 586 to 4 B.C.; a literary study of Jeremiah, Ezekiel, Daniel, Joel, Obadiah, Jonah, Nahum, Habakkuk, Zephaniah, Haggai, Zechariah, Malachi. One hour a week; *or* a course in Hellenistic Greek (selections from the Septuagint) p. 84-2*e*.

2*b*. *General Course.* Hebrew Grammar with special attention to syntax; translation from English into Hebrew; translation into English of Genesis 37, 40-45; Ex. 3, 4, 15; Deuteronomy 5-11; II. Samuel 14-19; history of the Massoretic Text and the Versions; outlines of the geography of Palestine. Davidson's Hebrew Grammar; Kittel's Biblia Hebraica; Brown, Driver, and Briggs' Lexicon; Kent, History of the Hebrew People, Vol. I. Four hours a week.

2*c*. *Orientals: Greek and Hebrew.* Hebrew Grammar with special attention to syntax. Translation into English, the same as 2*b*. Hebrew prose exercises. Davidson's Hebrew Grammar (19th edition); Davidson's Hebrew Syntax. Two hours a week.

2*d*. *Orientals: Greek and Hebrew.* Translation into English of the Book of Judges 1-12; I Sam. 9–19; II Kings 17-23. Two hours a week.

2*e*. *Orientals.* Translation into English of Exodus 8-20; Deuteronomy 12-17. Two hours a week.

2*f*. *Orientals.* Grammar of Palestinian Aramaic with translation of extracts from Baer and Delitzsch's Text of Daniel and Ezra; Marti, Biblisch-Armaeische Grammatik. Michaelmas Term. Two hours a week.—Syriac Grammar with translation of easy prose into English; Brockelmann's Syrische Grammatik; Roediger's Chrestomathia Syriaca. Easter term. Two hours a week.

2*g*. *Orientals: Greek and Hebrew.* History of the Western Orient until 722 B.C. H. R. Hall, The Ancient History of the Near East. One hour a week.

3*a*. *General Course.* A literary study of the books from Genesis to Nehemiah, and of the Synoptic Gospels. Two hours a week. *Or* a Course in Hellenistic Greek (selections from Septuagint and from New Testament), p. 84, 3*e*.

3*b*. *General Course: Greek and Hebrew.* Translation from English into Hebrew; Hebrew history from the settlement in Canaan to the end of the Kingdom (586 B.C.). Translation into English of Amos; Isaiah 1-6; 40-45 and 52-55; II. Kings 15-25; Kittel's Biblia Hebraica; Davidson's Hebrew Grammar (19th edition); Davidson's Hebrew Syntax; Brown, Driver and Briggs' Lexicon. Kent, History of the Hebrew people, vols. II. and III. Two hours a week.

3*c*. *Orientals.* Translation into English, the same as 3*b*. One hour a week.

3*d*. *Orientals: Greek and Hebrew.* Translation into English of selections from Isaiah 1–39. Two hours a week.

3*e*. *Orientals.* Translation into English of selections from Jeremiah, Ezekiel, and the Minor Prophets. Two hours a week.

3*f*. *Orientals.* Hebrew prose composition. Gesenius-Kautzsch, Hebrew Grammar. One hour a week.

3*g*. *Orientals: Greek and Hebrew.* History of the Western Orient from 722 B.C., to 330 B.C., with special attention to the history, literature and institutions of the Hebrews. One hour a week.

3*h*. *Orientals.* Arabic First Course; Thatcher's Arabic Grammar with exercises in translating easy prose into English. Two hours a week.

3*i*. *Orientals.* Advanced course in Aramaic or Syriac. Two hours a week.

3*j*. *Orientals.* Elements of Assyrian; Fr. Delitzsch's Assyrische Lesestücke. Outlines of Comparative Grammar of the Semitic Languages; Brockelmann's Vergleichende Grammatik. Two hours a week.

4*a*. *General Course.* A literary study of the didactic and lyrical poetry of the Hebrews, and of selected Epistles of the New Testament. *Or* a course in Patristic Greek. Two hours a week.

4*b*. *General Course: Greek and Hebrew.* Translation from English into Hebrew; characteristics of Hebrew poetry; Jewish history from the fall of Jerusalem 586 B.C. to the end of the Maccabaean period. Translation into English of selected Psalms; 100, 95, 24, 15, 48, 87, 114, 81, 147, 148, 150, 46, 47, 93, 97, 8, 19, 29, 103, 104, 65, 67, 118, 21, 116, 30, 74, 89, 90, 20, 72, 42, 43, 22, 51, 137, 84, 122, 110, 107, 23, 78, 127, 133, 45; Zechariah 1-8; Jonah; II. Chronicles 1-9; Kittel's Biblia Hebraica; Davidson's Hebrew Syntax; Gesenius-Kautzsch, Hebrew Grammar; Kent, History of the Jewish People, Vols. III. and IV. Two hours a week.

4*c*. *Orientals.* Translation into English, the same as 4*b*. One hour a week.

4*d*. *Orientals: Greek and Hebrew.* Translation into English of selections from Job, Proverbs and Ecclesiastes. One hour a week.

4*e*. *Orientals.* Translation into English of Psalms not in 4*b*. One hour a week.

4*f*. *Orientals.* Hebrew prose composition. Davidson's Hebrew Syntax. One hour a week.

4*g*. *Orientals: Greek and Hebrew.* History of the Western Orient from 330 B.C. to 135 A. D. with special attention to the history and literature of the Jews, and the History of Mahomet and the Caliphate. One hour a week.

4*h*. *Orientals.* Arabic Second Course; Thatcher's Arabic Grammar (continued); Brünnow's Chrestomathy of Arabic Prose Selections; Harder's Arabic Chrestomathy. Two hours a week.

4*i*. *Orientals.* Advanced course in Aramaic or Syriac. Two hours a week.

4*j*. *Orientals.* Advanced course in Assyrian. Inscriptions of Sennacherib, Sargon, Asurbanipal. Two hours a week.

MODERN LANGUAGES.

ENGLISH.

UNIVERSITY COLLEGE:

W. J. ALEXANDER, B.A., PH.D. ..... *Professor.*
D. R. KEYS, M.A. ..... *Professor of Anglo-Saxon.*
M. W. WALLACE, B.A., PH.D. ..... *Professor.*
W. H. CLAWSON, M.A., PH.D. ..... *Assistant Professor.*
W. P. M. KENNEDY, M.A., LITT.D. ..... *Substitute Lecturer.*
MISS M. WRONG ..... *Temporary Assistant.*
MISS GLADYS WOOKEY, B.A. ..... *Temporary Assistant.*
MISS A. M. LOBB, B.A. ..... *Temporary Assistant.*

VICTORIA COLLEGE:

A. H. REYNAR, M.A., LL.D.....*Professor Emeritus.*
O. P. EDGAR, B.A., PH.D.....*Professor.*
L. E. HORNING, B.A., PH.D.....*Professor.*
C. E. AUGER, B.A.....*Associate Professor.*

TRINITY COLLEGE:

H. C. SIMPSON, M.A.....*Professor.*
W. D. THOMAS, B.A.....*Lecturer.*
MISS M. M. WADDINGTON, M.A.....*Lecturer.*
MISS MABEL CARTWRIGHT, B.A.....*Lecturer.*

ST. MICHAEL'S COLLEGE:

W. P. M. KENNEDY, M.A., LITT.D.....*Professor.*
REV. E. J. MCCORKELL, M.A.....*Associate Professor.*
M. M. MARGARITA, B.A.....*Lecturer.*

Composition: In the first two years of the undergraduate course original essays are required during the session from students taking the General and Honour Courses in English, even from those who have received dispensation from attendance upon lectures. These essays, after being carefully examined, are returned with suggestions and criticisms, and the marks assigned are reckoned in determining standing in the May examinations.

Throughout the course Composition shall be regarded as a subject distinct from literature, and candidates failing to secure the necessary standing in these essays are required to repeat the work of the year in English composition.

Provision will be made by a special paper in English composition for the examination of those candidates for Senior Matriculation who are not in attendance, and who have not presented the essays required.

PASS COURSES.

1*a*. Composition: The writing of at least four original compositions during the session.

1*b*. Familiarity with and intelligent appreciation of the following texts: Sir Patrick Spens, Edward, The Braes o' Yarrow, Waly Waly; Dryden, A Song for St. Cecilia's Day, Alexander's Feast; Pope, The Rape of the Lock; Thomson, extracts from Summer and Winter; Gray, Spring, Eton College, The Elegy, The Fatal Sisters; Goldsmith, Deserted Village; Burns, Address to the Deil, To John Lapraik, To a Mouse, Last May a Braw Wooer, A Man's a Man for a' that; Wordsworth, Sonnets (omitting Personal Talk, Scorn not the Sonnet, A Poet he hath put his heart to school); Scott, Rosabelle, Brignall Banks, Lochinvar, Redgauntlet; Keats, sonnets on Chapman's Homer, and "Bright Star! would I". The Eve of St. Agnes, On a Grecian Urn, To a Nightingale, To Autumn; Newman, Idea of a University (Knowledge its own end, Knowledge in

relation to learning), George Eliot, Silas Marner; Browning, Fra Lippo Lippi, Youth and Art, The Bishop orders his Tomb; Tennyson, The Palace of Art; Ruskin, Crown of Wild Olive (Preface, Traffic, Work). [The poetical selections in this paragraph are contained in "Representative Poetry" [Second edition, Students' Book Department, University of Toronto.]

Two hours a week.

2*a*. Composition: The writing of at least four original compositions during the session.

2*b*. Shakespeare, Romeo and Juliet, Henry IV., Parts I. and II., Twelfth Night, Hamlet.

Three hours a week.

3*a*. The writing of essays on subjects connected with one of the Third Year courses in literature.

3*b*. Transition and earlier nineteenth-century literature: The selections from Cowper to Byron inclusive in "Representative Poetry" (second edition); Burke, French Revolution; Scott, Marmion (with introductory epistles); the essays by Wordsworth, Coleridge, Lamb and Hazlitt in "English Critical Essays of the Nineteenth Century" (World's Classics); Jane Austen, Pride and Prejudice; Lamb, Poor Relations, Detached Thoughts on Books and Reading, Christ's Hospital; Newman, Idea of a University (Knowledge its own end, and Knowledge in relation to learning); Carlyle, Signs of the Times, Characteristics.

Three or two hours a week.

4*a*. The writing of essays on subjects connected with one of the Fourth Year courses in literature.

4*b*. Later nineteenth-century literature: selections from Byron to Morris in "Representative Poetry" (second edition); essays by Shelley, Arnold, Ruskin, Mill and Bagehot in "English Critical Essays of the Nineteenth Century" (World's Classics); Carlyle, Sartor Resartus (Books I. and II.); Dickens, Great Expectations; Ruskin, A Joy Forever; Arnold, The Function of Criticism, The Literary Influence of Academies.

Three or two hours a week.

HONOUR COURSES.

1*a*. Composition: The writing of at least four original compositions during the session.

1*c*. Shakespeare, Romeo and Juliet, Henry IV., Parts I and II., Twelfth Night, Hamlet.

Two hours a week.

2*a*. Composition: The writing of at least four original compositions during the session.

2*c*. (i) Elizabethan literature with special study of the following texts; More, Utopia; Ascham, The Schoolmaster; Sidney, Apology for Poetry: Hakluyt, Voyages of Gilbert and Drake; the selections from More to Dekker, inclusive, in Manly's "English Prose"; Spenser, Faerie Queene, Book I.; the selections from Wyatt to Hall in "Representative Poetry" (second edition).

(ii) An outline of eighteenth-century literature, with special study of the following texts: Dryden, Essay of Dramatic Poesy, Preface to the Fables; Bunyan, Grace Abounding; Swift, Gulliver's Travels, Books I. and II.; Addison and Steele, Sir Roger de Coverley (Cassell's National Library); Defoe, Robinson Crusoe; Johnson, Preface to Shakespeare, Lives of the Poets (Dryden, Addison and Pope); Goldsmith, Vicar of Wakefield; Boswell, Life of Johnson (May 16, 1763—end of 1764; April 3, 1773—end of May, 1773; March 21, 1775—May 21, 1775); selections from Dryden to Shenstone inclusive in "Representative Poetry" (second edition).

Four or three hours a week.

3*a*. The writing of essays on subjects connected with one of the Third Year courses in literature.

3*b*. Transition and earlier nineteenth-century literature: The selections from Cowper to Byron inclusive in "Representative Poetry" (second edition); Burke, French Revolution; Scott, Marmion (with introductory epistles); the essays by Wordsworth, Coleridge, Lamb and Hazlitt in "English Critical Essays of the Nineteenth Century" (World's Classics); Jane Austen,Emma; Lamb, Poor Relations, Detached Thoughts on Books and Reading, Christ's Hospital; Newman, Idea of a University (Knowledge its own end, and Knowledge in relation to learning); Carlyle, Signs of the Times, Characteristics.

Three or two hours a week.

3*c*. Bright, Old English Grammar and selections from the Reader; Outlines of Old English literature. Two hours a week.

3*d*. Seventeenth-century literature with special study of: Milton, L'Allegro, Il Penseroso, Arcades, Comus, Lycidas, Sonnets, Paradise Lost, Paradise Regained, Samson Agonistes; selections from Jonson to Butler inclusive in "Representative Poetry" (second edition); Milton, Of Reformation, The Reason of Church Government, Of Education, Areopagitica; Browne, Religio Medici; Halifax, Character of a Trimmer.

Two hours a week.

4*a*. The writing of essays on subjects connected with one of the Fourth Year courses in literature.

4*b*. Later nineteenth-century literature: selections from Byron to Morris in "Representative Poetry" (second edition); essays by Shelley, Arnold, Ruskin, Mill and Bagehot in "English Critical Essays of the Nineteenth Century" (World's Classics); Carlyle, Sartor Resartus (Books I. and II.); Dickens, Great Expectations, Ruskin, A Joy Forever: Arnold, The Function of Criticism, The Literary Influence of Academies.

Three or two hours a week.

4c. (i) Historical English grammar.

(ii) A course on Chaucer and his age with special study of the following selections: The Prologue to the Canterbury Tales, The Knightes Tale, Sir Thopas, The Nonne Preestes Tale, Compleynte unto Pite, Parlement of Fowls, Wordes unto Adam, The Former Age, Fortune, Truth, Proverbs, Prologue to Legend of Good Women. [Chaucer (Oxford Press) or the Globe Chaucer (Macmillan) or MacCracken's Chaucer (Yale University Press); The Chaucer Epoch, by J. C. Stobart (Arnold)].

Two hours a week.

4d. Newman, Apologia, The Idea of a University, Preface and Discourses V.-VIII.; J. S. Mill, Essays on Bentham, Coleridge, Civilization, Utilitarianism, Liberty; Carlyle, Past and Present, Book III., Shooting Niagara—and After?; Ruskin, Unto this Last; Arnold, Culture and Anarchy, Democracy, Equality.

Two hours a week.

4e. The Development of the English Drama to 1642. Reading of the following texts: Noah's Flood, The Sacrifice of Isaac, Secunda Pastorum, Everyman (Pollard's "Miracle Plays"); Lyly, Endymion; Greene, Friar Bacon; Marlowe, Tamburlaine, Part I., Edward II.; Kyd, Spanish Tragedy; Shakespeare, Othello, King Lear, Antony and Cleopatra, The Tempest; Ben Jonson, Every Man in his Humour; Beaumont and Fletcher, Philaster; Webster, Duchess of Malfi.

Two hours a week.

GERMAN.

UNIVERSITY COLLEGE:

W. H. VAN DER SMISSEN, M.A., PH.D.....*Professor Emeritus.*
G. H. NEEDLER, B.A., PH.D.....*Professor.*
B. FAIRLEY, M.A., PH.D.....*Associate Professor.*
PETER TOEWS, M.A., PH.D.....*Assistant Professor.*
G. E. HOLT, M.A., MUS.BAC.....*Lecturer.*

VICTORIA COLLEGE:

L. E. HORNING, B.A., PH.D.....*Professor.*
A. E. LANG, M.A.....*Professor.*
MISS M. E. T. ADDISON, B.A.....*Lecturer.*
J. D. ROBINS, B.A.....*Instructor.*

TRINITY COLLEGE:

A. H. YOUNG, M.A., D.C.L.....*Professor.*
MISS L. C. SCOTT, M.A.....*Lecturer.*

ST. MICHAEL'S COLLEGE:

REV. M. J. OLIVER, B.A., PH.M.....*Associate Professor.*
S. M. PERPETUA, B.A.....*Lecturer.*

NOTE.—No candidate should join any class in German without previously satisfying the instructor as to his ability to profit by the instruction given.

1*a*. Grammar; dictation; pronunciation; translation from modern German; translation from English into German. Four hours a week.

1*b*. Reading of easy prescribed texts in scientific German; translation of similar passages at sight. Two hours a week.

1*c*. Grammar; dictation; pronunciation; translation at sight from modern German; Shorter Poems of Goethe and Schiller (ed. van der Smissen); Freyrag, Die Journalisten; Keller, Dietegen; Supplementary reading. Two hours a week.

1*d*. Oral term work; simple narrative composition. One hour a week.

1*e*. Political and Social History of Germany to 1500.

1*f*. (English and History) Goethe. Dichtung und Wahrheit (von Jagowmann, Holt Edition); Fiedler's Book of German Verse, selections from Hölderlin to end.

2*a*. Grammar; dictation; pronunciation; translation from modern German; translation from English into German. Four hours a week.

2*b*. Reading of prescribed texts in scientific German; translation of scientific German at sight. Two hours a week.

2*c*. Grammar; dictation; pronunciation; translation from English into German; translation at sight from modern German; history of German literature in the eighteenth century with special attention to Lessing and Schiller: Lessing, Minna von Barnhelm, Emilia Galotti; Schiller, Wallensteins Tod, Die Jungfrau von Orleans. Supplementary Reading. Two hours a week.

2*d*. Oral term work; simple narrative composition. One hour a week.

2*e*. Political and Social History of Germany from 1500 to 1713.

2*f*. (English and History). Lessing. Hamburgische Dramatwigie (Holt Edition); Grillparzer. Sappho.

3*a*. Grammar; dictation; pronunciation; translation from English into German; translation at sight from Modern German; outlines of the history of German literature from 1740; life and works of Schiller with special attention to ballads, Wallensteins Tod, Die Jungfrau von Orleans. Two hours a week.

3*b*. Grammar; translation at sight; life and works of Goethe with special attention to Lyrical Poems (Goebel ed.), Götz von Berlichingen, Iphigenie Auf Tauris; Hermann und Dorothea, Faust (Part I.). Supplementary Reading. Two hours a week.

3*c*. Oral term work; translation from English into German; Composition. Two hours a week.

3*d*. Political and Social History of Germany from 1713-1815.

3*e*. Lessing's Dramas and Dramatic Criticism. Two hours a week.

3*f*. Essays on prescribed topics.

4*a*. Grammar; dictation; pronunciation; translation from English into German; translation at sight from Modern German; outlines of the history of German literature from 1740; life and works of Goethe with special attention to lyrical poems, Egmont, Iphigenie auf Tauris, Hermann und Dorothea. Supplementary Reading. Two hours a week.

4*b*. Oral termwork; translation at sight; composition.

4*c*. A general acquaintance with the German literature of the nineteenth century with special attention to Grillparzer, Sappho, Der Traum ein Leben; Hebbel, Herodes und Mariamne; Heine, Prose (ed. A. B. Faust, Macmillan); Keller, Kleider machen Leute; Sudermann, Frau Sorge. Two hours a week.

4*d*. Middle High German Grammar; history of the German language; history of Middle High German literature; Hartmann von Au e, Der arme Heinrich. Two hours a week.

4*e*. Political and Social history of Germany from 1815 to 1914.

4*f*. The Austrian drama in the nineteenth century. Two hours a week.

4*g*. Essays on prescribed topics.

FRENCH.

UNIVERSITY COLLEGE:

JOHN SQUAIR, B.A. ..... *Professor Emeritus.*
J. H. CAMERON, M.A. ..... *Professor.*
J. S. WILL, B.A. ..... *Professor.*
ST. E. DE CHAMP, B. ÈS L., O.I.P. ..... *Associate Professor.*
F. C. A. JEANNERET, B.A. ..... *Lecturer.*
H. S. MCKELLAR, B.A. ..... *Lecturer.*
M. MORAUD, L. ÈS L. ..... *Lecturer.*
L. A. BIBET ..... *Instructor.*
P. BALBAUD ..... *Instructor.*

VICTORIA COLLEGE:

H. E. FORD, M.A. ..... *Professor.*
VICTOR DE BEAUMONT. M.A. ..... *Associate Professor.*
MISS M. C. ROWELL, B.A. ..... *Lecturer.*

TRINITY COLLEGE:

R. E. L. KITTREDGE, M.A. ..... *Professor.*
H. P. SPRING, M.A. ..... *Lecturer.*
MISS L. C. SCOTT ..... *Reader.*

ST. MICHAEL'S COLLEGE:

REV. R. MCBRADY ..... *Professor.*
REV. J. J. SHERIDAN, M.A. ..... *Lecturer.*
REV. W. H. MURRAY, B.A. ..... *Lecturer.*

NOTE.—In order to be a member of any class in French, a student must satisfy the instructor as to his ability to profit by the instruction given. Students in all the years will be required to read supplementary texts under the direction of their respective instructors.

Students taking the full honour French course must make satisfactory progress in the oral use of the language. Opportunity for this work will be provided in each of the four years.

PASS COURSE.

1*a*. Grammar; dictation; translation from English into French; translation at sight from modern French. A minimum of three hundred and fifty pages will be read from the following texts: Bazin: Les Oberlé; Feuillet: Le roman d'un jeune homme pauvre; Sandeau: Mademoiselle de la Seiglière; Girardin: La joie fait peur; Feuillet: Le village; de Musset: Fantasio, On ne badine pas avec l'amour; Super: Histoire de France; Mignet: Histoire de la Révolution française; Daudet: Lettres de mon moulin; Sous les armes (ed. Moraud). Four hours a week.

2*a*. Grammar; dictation; translation from English into French; translation at sight from modern French. The following texts are prescribed for critical study: Barrès: Colette Baudoche; Pailleron: Le monde où l'on s'ennuie; Coppée: Pour la couronne; (Selections from) French Short Stories (ed. Buffum), *or* Georges Duruy: Histoire sommaire de la France, classe de septième. Three hours a week.

2*b*. Course for Science Students. Two hours a week.

3*a*. Standards of the classical age and the main ideas of the eighteenth century, studied in French literature from Malherbe to the *philosophes*. Pellissier: Précis de l'histoire de la littérature française, pp. 139-364; (Selections from) French Prose of the XVIIth Century (ed. Warren); Corneille: Le Cid; Molière: Le Misanthrope; Racine: Athalie; La Fontaine: Fables (Selections); (Selections from) Voltaire's Prose (ed. Cohn and Woodward); Supplementary reading. Translation from English into French; translation at sight from modern French. Two hours a week.

4*a*. Forces and movements in French literature since 1750. Pellissier: Précis de l'histoire de la littérature française, pp. 365-544; (Selections from) Pages choisies de J.-J. Rousseau (ed. Rocheblave); (Selections from) French Lyrics of the XIXth Century (ed. Henning); Hugo: Hernani; Balzac: Gobsek; Augier: Les Effrontés; (Selections from) Quelques Contes des romanciers naturalistes (ed. Dow and Skinner); Rostand: Cyrano de Bergerac; Bazin: Le Blé qui lève; Supplementary reading. Translation from English into French; translation at sight from modern French. Two hours a week.

HONOUR COURSE.

1*b*. Grammar; dictation; pronunciation; translation from English into French; translation at sight from modern French.

Survey of French literature with special reference to the mediæval period. The following texts are prescribed for critical study: Augier: Le Gendre de Monsieur Poirier; France: Le Crime de Sylvestre Bonnard; Quelques contes des romanciers naturalistes (ed. Dow and Skinner); French Lyrics (ed. Canfield). Four hours a week.

1*c*. Outlines of Mediæval History. One hour a week.

2*c*. History of French literature from the middle of the sixteenth century to the end of the seventeenth century, illustrated by the reading of texts from which the following are prescribed for critical study: French Verse of the XVIth Century (Wright); Bossuet: Oraison funèbre de Henriette d'Angleterre; La Bruyère: Caractères, (De la société et de la conversation); Corneille: le Cid; Racine: Iphigénie; Molière: Tartuffe, le Misanthrope; Boileau: l'Art poétique; La Fontaine: Fables (ed. Clément). Two hours a week.

2*d*. History of France in the sixteenth and seventeenth centuries. One hour a week.

2*e*. Simple narrative composition; translation from English into French; translation at sight. One hour a week.

3*b*. History of French literature during the eighteenth century, illustrated by texts from which the following are prescribed for critical study: Lesage: Turcaret; Marivaux: Le Jeu de l'amour et du hasard; Montesquieu: Esprit des lois (Books I, II, III); Voltaire: Zaïre, Zadig, Prose (ed. Cohn and Woodward, pp. 1-73, 118-162, 294-347); Rousseau: Pages choisies (ed. Rocheblave); Beaumarchais: Le Mariage de Figaro; André Chénier (ed. Becq de Fouquières): Bucoliques I and XV, Hymnes et Odes III and VII; Chateaubriand: Atala.

3*c*. History of France in the eighteenth century.

3*d*. Composition; translation from English into French; translation at sight. Two hours a week.

3*e*. The Classic ideal as represented in critical writings from the Pléiade to the beginnings of Romanticism. The following texts will be used: Du Bellay: Défense et illustration de la langue française; Boileau: Selections from the Satires, Epistles, and the Art poétique; Voltaire: Essai sur la poésie épique; Diderot: De la poésie dramatique; Rousseau: Lettre à M. d'Alembert; Mme de Staël: De la littérature.

3*f*. Essays on prescribed topics.

4*b*. History of French literature during the nineteenth century, illustrated by the reading of texts from which the following are prescribed for critical study: Lamartine: Œuvres choisies, Poésie (ed. René Waltz); Hugo: (Selections from) Poems (ed. Canfield), Notre-Dame de Paris (ed. Léon Delbos), Hernani; Balzac: Eugénie Grandet, le Curé de Tours; Augier: Le Gendre de Monsieur Poirier; Michelet and Taine in Extraits des historiens français du XIX^{e} siècle (ed. Jullian); Leconte de Lisle: Poèmes barbares (Selections); Alphonse Daudet: Fromont jeune et Risler aîné.

4*c*. History of France from the beginning of the nineteenth century to the present.

4*d*. Composition; translation from English into French; translation at sight from French authors of any period.

4*e*. Elementary course in Old French. One hour a week.

4*f*. A course in contemporary literature: Becque, Heredia, Verlaine, France, Loti, Hervieu, Brieux, Margueritte, Maeterlinck, Barrès, Rostand, and de Régnier.

4*g*. Essays on prescribed topics.

ITALIAN AND SPANISH.

M. A. BUCHANAN, B.A., PH.D. ..... *Professor.*
J. E. SHAW, A.B., PH.D. ..... *Professor.*
A. LIPARI, M.A. ..... *Lecturer.*
M. C. E. CATALANO, M.A. ..... *Instructor.*
B. F. SWEDELIUS, B.A., PH.D. ..... *Temporary Instructor.*
N. CACCIAPUOTI, M.A. ..... *Temporary Instructor.*
PIJOAN, J. ..... *Temporary Instructor.*
MISS M. R. SQUAIR, B.A. ..... *Assistant Instructor.*

Italian.

1*a*. Grammar; pronunciation and dictation; translation from English into Italian; translation from the prescribed text. Text-books: Wilkins and Altrocchi, Italian Short Stories; Phelps, Italian Grammar. Two hours a week.

1*b*. Oral exercises in Italian. One hour a week.

2*a*. Grammar; dictation; translation from English into Italian; translation at sight from modern Italian. Text-books: Phelps, Italian Grammar; Fogazzaro, Daniele Cortis. Two hours a week.

2*b*. Oral exercises and simple narrative composition in Italian. One hour a week.

3*a*. Selections from Ariosto (ed. Papini). One hour a week.

3*b*. Giacosa, Come le Foglie; grammar; translation at sight from modern Italian. One hour a week.

3*c*. History of Italian literature from Ariosto to the present time; lectures, with the reading of illustrative selections from The Oxford Book of Italian Verse; Hauvette, Littérature italienne. One hour a week.

3*d*. Free composition in Italian and oral exercises. One hour a week.

4*a*. Dante, Divina Commedia (ed. Grandgent): Inferno. One hour a week.

4*b*. Boccaccio, Novelle scelte (ed. Fornaciari); grammar, translation at sight. One hour a week.

4*c*. History of Italian literature up to Ariosto; lectures, with the reading of illustrative selections from D'Ancona e Bacci, Letteratura italiana, Vol. 1; Hauvette, Littérature italienne. One hour a week.

4*d*. Oral exercises: practice in speaking Italian, and discussion in Italian of assigned topics. One hour a week.

Spanish.

1*a*. Grammar; pronunciation; dictation; translation from English into Spanish; translation from the prescribed text. Text-books: Hills and Ford, First Spanish Course; Marcial Dorado, España pintoresca. Two hours a week.

1*b*. Oral exercises in Spanish. One hour a week.

2*a*. Grammar; dictation; translation from English into Spanish; translation at sight from modern Spanish. Text-books: Cool, Spanish Composition; Hills, Spanish Tales. Two hours a week.

2*b*. Simple narrative composition in Spanish and oral exercises; Espinosa, Composition. One hour a week.

3*a*. Espronceda, El Estudiante de Salamanca; Valera, Pepita Jiménez Benavente, Tres Comedias (Heath & Co.), Selections from the Oxford Book of Spanish Verse. Two hours a week.

3*b*. Blasco Ibáñez, La Barraca; Echegaray, El gran Galeoto; grammar, translation at sight from modern Spanish; outlines of the history of Spanish literature of the nineteenth century; Fitzmaurice-Kelly, Historia de la Literatura española. One hour a week.

3*c*. Free composition in Spanish and oral exercises. One hour a week.

4*a*. Alarcón, Las Paredes oyen; Calderón, El Alcalde de Zalamea; Cervantes, Don Quixote; grammar; translation at sight. Two hours a week.

4*b*. Lazarillo de Tormes (ed. Cejador); selections from the Oxford Book of Spanish Verse. History of Spanish literature of the Golden Age together with the history of the drama from its beginnings; Fitzmaurice-Kelly, Historia de la Literatura española. One hour a week.

4*c*. Free composition in Spanish and oral exercises. One hour a week.

Phonetics.

Elementary physiological phonetics, with practical exercises in the sounds of the modern languages studied. One hour a week in the Second Year of the Modern Language Course.

HISTORY.

G. M. WRONG, M.A.....*Professor.*
R. HODDER WILLIAMS, M.A.....*Assistant Professor.*
GEORGE M. SMITH, M.A.....*Assistant Professor.*
C. V. MASSEY, B.A.....*Lecturer.*
W. S. WALLACE, M.A.....*Lecturer.*
W. P. M. KENNEDY, M.A., LITT.D.....*Substitute Lecturer.*
S. H. HOOKE, M.A., B.D.....*Special Lecturer.*
MISS M. G. REID, B.A.....*Instructor.*
MRS. E. A. BOTT, B.A.....*Substitute Instructor.*

1. An introduction to Mediæval History. The history of Canada to 1763. An introduction to the study of constitutional history and historical geography.

2*a*. The history of the British Empire since 1763 with special reference to Canada and to the American Revolution.

2*b*. The political history of England from 1485 to 1558, including an outline of the chief features of the Continental Renaissance;

or

The political history of England from 1558 to 1660.

2*c*. The history of England from the earliest times to 1603 with special reference to constitutional development.

2*d*. Mediæval Society and the Holy Roman Empire.

2*e*. France and Germany in the 16th and 17th centuries.

2*f*. The Middle Ages: a general study of their characteristics and influence on the course of European history, with an outline of the principal movements of the period.

3*a*. European History from 1763 to 1815, with special reference to the French Revolution.

3*b*. The political history of England from 1660 to 1815.

3*c*. The history of England since 1603 with special reference to constitutional development. The working of modern British institutions.

3*d*. The British Constitution and its development.

3*e*. France and Germany in the 18th century.

4*a*. European history from 1815 to the present time; the American Civil War and modern development of the United States; the problems of geography, race, etc. in history.

4*b*. The political history of England since 1815.

4*c*. The constitutional history of Canada with references to Australia and South Africa and to other federal systems.

5. Essays on prescribed topics.

6. All students in the Honour course of Modern History who aim to secure first class honours must select in their Third Year under the direction of the Professor of History a subject for an historical essay, and must present the essay before the end of March in their Fourth Year. The essay must be based on the study of original materials.

7. The history of England from the meeting of the Long Parliament to the Restoration of Charles II. to be studied with special reference to documents, letters, and memoirs of the time.

8. The History of Revolutionary France from the meeting of the Estates General to the fall of Robespierre, with special reference to original authorities;

or

The theory and practice of Representative Government, with special reference to constitutional documents, reports, white papers, etc.

9. Aristotle: Politics; and Hobbes: Leviathan.

Note.—Lectures will be given, and students will be examined, in historical geography in connection with the periods prescribed for political history in each year.

POLITICAL ECONOMY.

JAMES MAVOR, PH.D.....*Professor.*
R. M. MACIVER, M.A., D.PHIL.....*Associate Professor.*
S. A. CUDMORE, B.A.....*Assistant Professor.*
W. JACKMAN, M.A.....*Assistant Professor.*
J. D. FALCONBRIDGE, M.A., LL.B..... *Lecturer in Commercial Law.*

1. (*a*) Term essays (*b*) January examinations may be held in certain subjects concluded in the first term.

Second Year: The first essay in the Second Year shall be a topographical and economic account of the student's home town, city, county or district. A printed outline indicating the plan to be followed may be obtained from the Registrar. This essay shall be due on the second Wednesday in November. The other essays are on subjects to be prescribed during the session.

Third Year: The subjects are to be selected after consultation with the Professor on topics connected with Economic Theory.

Fourth Year: The essays are to be on subjects connected with the work of the year, and are to be arranged after consultation with the staff.

First Year.

2. Economic Geography. The course consists of an account of Physical Geography in its economic aspects, the natural resources of the chief countries, ways and communications, ancient and modern trade routes together with an account of the more important economic changes of modern times. Books recommended: Newbigin, Modern Geography; Lyde, Short Commercial Geography; Gregory, Keller and Bishop, Physical and Commercial Geography; Adam, Commercial Geography; Chisholm, Commercial Geography; Consular Reports, Great Britain and United States. One hour a week.

Second Year.

3. General introduction to the study of Political Economy. The following works will be found useful: Marshall, Economics of Industry; Chapman, Political Economy; Taussig, Principles of Economics; Adam Smith, Wealth of Nations; John Stuart Mill, Principles of Political Economy; Seligman, Principles of Economics. Fifty hours.

4. Canadian Economic History and Descriptive Economics. (*a*) An account of the economic organization of Society under the French régime. The development of agriculture, transportation, industry and commerce since 1763. Books recommended: Munro, The Seigneurial System in Canada; Munro, Documents relating to Seigneurial Tenure in Canada; Porritt, Sixty Years of Protection in Canada; Mavor, Economic History of Canada; Census of Canada; Archives of Canada and of Ontario; Canada and its Provinces, Vols. 2, 4, 5, 9, 10; county histories. (*b*) An account of the exploitation of the natural resources and of the principal industries and industrial centres of Canada. Books recommended: British Association Handbook of Canada, 1897; Mavor, Report on North-West of Canada; Gérin, L'habitant de Saint-Justin; Métin, La Colombie Britannique; Hopkins, Canada, an Encyclopædia; Hopkins, Canadian Annual Review; Porritt, the Revolt against the New Feudalism; Alexander Hamilton Institute, Modern Business, 12 volumes; Canada Year Book. Twenty-five hours.

5. Economic History and Theory with special reference to the eighteenth and nineteenth centuries. Books recommended for study: Clay, Economics for the General Reader; Gibbins, Industry in England; Rand, Economic History since 1763; Toynbee, Industrial Revolution; Webb, History of Trade Unionism in England; Hobson, Evolution of Modern Capitalism. Twenty-five hours.

6. Descriptive Economics. An economic survey, historical and geographical, with special reference to North American development and conditions. Books recommended: Newbigin, Modern Geography; Bogart, Economic History of the U.S.; Mavor, Economic History of Canada; Government Reports, Canada Year Book, etc.

Third Year.

7. History of Economic Theory. The following books are recommended. Mun, England's Treasure by Foreign Trade; Turgot, Reflections on the Formation and the Distribution of Riches; Adam Smith, Wealth of Nations, ed. Nicholson; Ricardo's Works, ed. Gonner; Ingram, History of Political Economy; Haney, History of Economic Thought; Ashley, Economic History, Part I. Chap. 3, Part II. Chap. 6; Sewall, Theory of Value before Adam Smith (Publications of American Economic Association, 1901); Bonar, Philosophy and Political Economy; Nys, Researches in the History of Economics; Gide and Rist, History of Economic Doctrines (tr. Richards). Thirty-seven hours.

8. Criticism of current economic theories of value, interest, rent and wages. The following books are recommended: Taussig, Principles of Economics; J. S. Mill, Principles of Political Economy; Marshall, Principles of Economics; Böhm-Bawerk, Capital and Interest, and the Positive Theory of Capital (transl. Smart); Wieser, Natural Value; Smart, Introduction to the Theory of Value; Nicholson, Principles of Economics; Keynes, Scope and Method of Political Economy, Chaps. 1-3, 7, 9; Hobson, Economics of Distribution; J. B. Clark, Distribution of Wealth; Pierson, Principles of Economics. Thirty-seven hours.

Note.—A separate class in the subject matter of courses 7 and 8 will be held for students from the Department of Philosophy. It will be of a more introductory character, and be specially intended to relate economic theory and philosophy.

9. International Trade: The theory of international trade, history of modern customs tariffs, description of current methods in international commerce. Books recommended: Bastable, Theory of International Trade, and Commerce of Nations; Taussig, Tariff History of the U.S.; McLean, Tariff History of Canada; Porritt, Sixty Years of Protection in Canada; Rabbeno, American Commercial Policy; Fuchs, The Trade Policy of Great Britain; Ashley, Modern Tariff History. Thirteen hours.

10. Foreign Exchange: The principles and practice of foreign exchange; the movements of credits. Books recommended: Goschen, Theory of Foreign Exchanges; Clare, A, B, C of the Foreign Exchange. Five hours.

11. Money: Functions of money, standard money, legal tender, Gresham's law, quantity theory, bimetallism, monetary systems and policies of the leading countries. Books recommended: Bagehot, Lombard Street; Jevons, Money and the Mechanism of Exchange; Nicholson, Banker's Money; Price, L. L., Money and Prices; Nicholson, Money and Monetary Problems; Withers, The Meaning of Money; Nelson, A, B, C of Wall Street; Kinley, Money; Hull (edit.), Practical Problems in Banking and Currency; Noyes, Forty Years of American Finance; Layton, Introduction to the History of Prices. Thirteen hours.

12. Money: Advanced course (primarily intended for students in the graduating department of Commerce and Finance). Books recommended: Laughlin, Principles of Money; Irving Fisher, Purchasing Power of Money. Twelve hours.

13. Statistics: An outline of the history of statistics, methods of statistical analysis and study of statistical problems. Text-books and works of reference are: King, Elements of Statistical Method; Bowley, Introductory Manual of Statistics; Meitzen, History, Theory and Technique of Statistics (supp. vol. to Annals of American Academy of Political and Social Science, Philadelphia, 1891); Census Reports, Canada, Great Britain, and U.S.; Canada Year Book. Thirteen hours.

14. Statistics: Advanced course (primarily intended for students in the graduating department of Commerce and Finance). Bowley, Elements of Statistics. See also article, "Statistics", in Encyclopædia Britannica; the Statesman's Year Book; Block, Traité théorique et pratique de Statistique; Georg von Mayr, Statistik und Gesellschaftslehre; publications of Royal Statistical Society; publications of the American Statistical Association; reports of Ontario Bureau of Industries; Statistical Abstract for the United Kingdom; Labour Gazette (Ottawa). Thirteen hours.

15. Economic history from the early Middle Ages down to 1776. Books recommended: Ashley, Economic History, Parts I., II.; Seebohm, English Village Community; Meredith, Economic History of England; Unwin, Industrial Organization in the Sixteenth and Seventeenth Centuries; Mavor, Economic History of Russia; Vinogradoff, The Growth of the Manor; Vinogradoff, Villenage in England; Gomme, The Village Community; Gross, Gild Merchant, Chaps. 1-4; Rogers, Six Centuries of Work and Wages, Chaps. 1-6, 8-10; Cunningham, Growth of English Industry and Commerce; Lipson, The Economic History of England—Middle Ages; Bland, Brown and Tawney, English Economic History, Select Documents. Twenty-five hours.

16. Economic Theory. An Introduction to the Principles of Economics. Books recommended: Clay, Economics for the General Reader; Marshall, Economics of Industry; Ely and Wicker, Introduction to Economics.

Fourth Year.

17. Economic history from 1776 till the present time. Books recommended: Cunningham, Growth of English Industry and Commerce in Modern Times, Part II.; Marshall, Principles of Economics, Appendix A; Jevons, The State in Relation to Labour; Baines, Ure, and other histories of special industries; Mantoux, La Révolution Industrielle; Toynbee, Industrial Revolution; Ely, Labour Movement in America, Chaps. 3, 4; Webb, History of Trade Unionism; Bland, Brown and Tawney, English Economic History, Select Documents; Poor Law Commission Reports; Porter, Progress of the Nation; Assigned Speeches of Pitt, Huskisson, Peel, Gladstone, etc Thirty-seven hours.

18. Recent Economic Development. Books recommended: Hobson, Evolution of Modern Capitalism; Layton, Introduction to the History of Prices; Wells, Recent Economic Changes. The following official reports should also be consulted: Canada, Census of 1911; U.S. Census Reports, Reports of Industrial Commission and Commission on Immigration; Great Britain, Reports of Royal Commissions on Labour, Depression of Trade and Industry, Shipping Rings and the Poor Laws. Thirteen hours.

19. Labour Problems: An account of the rise of trade unionism in England and America and a comparison of the labour legislation of leading countries. Books recommended: Webb, Industrial Democracy; Ely, The

Labour Movement in America; Clark, The Labour Movement in Australasia; Seager, Social Insurance; Commons, Principles of Labour Legislation; Bulletins of the U.S. Bureau of Labour; Board of Trade Labour Gazette (English); The Labour Gazette (Canadian).

20. Transportation: An account of ocean and land transportation and its bearing upon commercial and industrial development. Railway policy, its history in Europe and America, railway rates, etc. Books recommended: Hadley, Railway Transportation; Mavor, English Railway Rates; Acworth, Elements of Railway Economics; Williams, Economics of Railway Transport; Knoop, Outlines of Railway Economics; H. R. Meyer, Government Regulation of Railway Rates; Ripley, Railway Problems (assigned portions); McLean, Governmental Regulation of Railways in the United States; McLean, The St. Lawrence Route (Railway Age). Thirteen hours.

21. Transportation: Advanced course (primarily intended for students in the graduating department of Commerce and Finance); the technique of railway rate making, the finances and administration of railways, marine transportation, docks. Books recommended as in preceding section, together with Johnson, Ocean and Inland Transportation. Twelve hours.

22. Banking: Nature and functions of a bank, management of the reserve, clearing house system, commercial banks and savings banks, clearing house system, trust companies, comparative study of banking policy. Books recommended: Dunbar, Theory and History of Banking; Bagehot, Lombard Street; Conant, Modern Banks of Issue; Conant, The Principles of Money and Banking, Vol. II.; Johnson, Report on the Canadian Banking System; Bisschop, Rise of the London Money Market. Thirteen hours.

23. Banking: Advanced course (primarily intended for students in the graduating department of Commerce and Finance). Books recommended: Publications of the National Monetary Commission (U.S.). Twelve hours.

24. Corporation Finance: Economic services of corporations, capitalization, stocks and bonds, problems of management, corporation reports, method of control, public policy in regard to corporations, speculation the stock exchange. Books recommended: Withers, H., Stocks and Shares; Duguid, The Stock Exchange; Ripley, Trusts, Pools and Corporations (assigned portions); Gerstenberg, Materials of Corporation Finance; Pratt, The Work of Wall Street; Meade, Corporation Finance. Thirteen hours.

25. Public Finance: National and local finance, history of financial science, public debts and the policy of national and local governments in relation to their issue, administration and redemption; administration of the public domain—lands, forests, minerals. Books recommended: Bastable, Public Finance; Leroy-Beaulieu, Science des Finances, Livre II., Chaps. 4, 5, 9, 10; Plehn, Public Finance; Cohn, The Science of Finance; Seligman, Essays on Taxation. Twenty-five hours.

26. Theory of Taxation: Principles of taxation; incidence of taxation; progressive taxation. Books recommended: Seligman, The Incidence of Taxation; Seligman, Progressive Taxation (American Econ. Assn., 1909). Five hours.

27. Revenue Systems of Modern States: Revenue systems of Great Britain, Germany, France, United States and Canada. Federal, provincial and municipal revenues. Methods of taxation of land, and of individuals and corporations. Books recommended: Official reports of taxing authorities in the various countries; Grice, J. W., National and Local Finance; Seligman, The Income Tax; Kennan, Income Taxation; Plehn, The Property Tax in California; Mavor, Taxation of Banks in Canada, Taxation of Corporations in Canada (State and Local Taxation Conference, 1908). Thirteen hours.

28. History and Criticism of Political Theories. Books recommended: Sidgwick, Elements of Politics; Pollock, History of the Science of Politics; Bonar, Philosophy and Political Economy; Ritchie, Principles of State Interference; Seeley, Introduction to Political Science; Mackenzie, Introduction to Social Philosophy; Barker, Political Thought of Plato and Aristotle. Twenty-five hours.

29. Comparative Politics: An account of the contemporary political systems of modern nations, especially Great Britain, the self-governing Dominions, and the Dependencies; Germany, France and the United States. The political institutions, methods of election of representatives and political parties of these countries, contemporary projects of change—direct legislation, the referendum, proportional representation, etc. Literature: Lowell, The Government of England; Lowell, Governments and Parties in Continental Europe; Bodley, France; Howard, The German Empire; Bryce, American Commonwealth; Cromer, Ancient and Modern Imperialism; Jebb, Colonial Nationalism. Twelve hours.

30. Public Administration: A comparative account of methods of central and local administration, professional and non-professional methods, departmental administration. "Good government" movements in various countries. Books recommended: Lowell, The Government of England; Redlich and Hirst, Local Government in England; English Citizen Series, (Macmillan); Reports of conferences on Good City Government. Thirteen hours.

31. A general sketch of economic theory and of economic history since 1776. Books recommended: *Economic Theory*, Marshall, Economics of Industry; Chapman, Outlines of Political Economy; Carver, Distribution of Wealth; Smart, Distribution of Income; *Economic History*, Adam Smith, Wealth of Nations; Gibbins, Industry in England will be used as a textbook.

32. Social Problems: A post-graduate class held by Professor Mavor for candidates for the degrees of M.A. and Ph.D. in subjects selected by them.

33. Commercial Law: General principles of the law of contracts. Rules relating to parties to contract; agency, partnership and companies. General view of the following: sale of goods, negotiable instruments, powers of banks, relation of banker and customer, insurance, carriage of goods, suretyship and guarantee, bills of sale and chattel mortgages, insolvency and assignments for the benefit of creditors. Text-book: Stephens, Elements of Mercantile Law (5 ed. 1911 by H. Jacobs). A larger book of a general character is Smith, Mercantile Law. The lecturer will if desired refer students to special works on any of the foregoing topics. Twenty-five hours.

34. Commercial Law: A second course, an extension of Course 33.

LAW.

A. H. F. LEFROY, M.A., K.C.....*Professor of Roman Law, English Law and Jurisprudence, and Special Lecturer in Federal, English and Colonial Constitutional Law*.....(Ob.)

1. English Law before the Norman Conquest; the changes effected in the law, especially of real property, by the Conqueror and his successors; the introduction or extension of the feudal system; the great changes effected by the legislation of Henry II., Edward I. and Edward III.; the creation of entailed estates; the struggle to obtain power to alienate them; legislation to restrict alienations in mortmain; the evasion of the law; "Uses" and the rise of the Court of Chancery; the Act giving power to devise lands; the legislation of Elizabeth to prevent frauds upon creditors and purchasers; the abolition of feudal tenures by Charles II.; the struggle between the Court of Chancery and the Common Law Courts in the reign of James I.; the efforts in the reign of George III. and subsequently to ameliorate the criminal law; the reforms in procedure in the last century in England; and the English Statutes after 1792 and their counterparts in our Colonial legislation are discussed and explained. Students are recommended to read: A Sketch of English Legal History: Maitland and Montague (Putnam, 1915); Pollock and Maitland, History of English Law (first part); Storry-Dean's, Student's Legal History; Jenks' Short History of English Law.

2. The lectures on Roman private law comprise a sketch of the customary law of the regal period at Rome and the history of the law from the time of the decemviri to the death of Justinian, giving an account of the growth of the unwritten law, the prætor's edict, the formulary system, the *jus gentium*, and the *jus naturae;* with an account of the legislation during the Republic and under the Empire and of the several attempts to form a code, finally terminating in the works of Justinian. A number of lectures are devoted to the substance of Roman law in the time of Justinian. The law of testamentary succession, the various kinds of wills, the duties of the heir, the gift of legacies, trust gifts, and the law of contracts and delicts are explained, and also the remedial processes for the protection and enforce-

ment of rights, including the *legis actiones*, the changes effected by the formulary system, the summary jurisdiction of the prætor, the abolition of the formulary system, and the *extraordinaria cognitio*. Students are recommended to read: chapter 44, of Gibbon's Decline and Fall; Sandar's Justinian; Sohm, Institutes of Roman Law (Ledlie's translation); and the Article on "Roman Law" in last edition of Encyclopædia Britannica, *or* Muirhead's *Historical Introduction to the Private Law of Rome.*

3. A course of lectures is delivered on General and Historical Jurisprudence, in which the attention of the student is directed to the definition and analysis of *law* and of *rights*, to the sources of law, to the classification of rights, to the consideration of antecedent rights *in rem* and *in personam*, to remedial rights, to adjective private law, to the nature of public law and its various divisions, and to the application of law. Students are recommended to read the following books: T. E. Holland, Elements of Jurisprudence; Sir H. Maine, *Ancient Law*, and his Lectures XII., XIII., in *Early History of Institutions*; and the Articles on the English Historical School of Jurisprudence, by Frederic Harrison in Vols. 30-1, *Fortnightly Review.* They will gain much if they also read: Sir F. Pollock, *First Book of Jurisprudence;* Sir H. Maine's works so far as not above specified; and Bryce, *Lectures on History and Jurisprudence.*

4. A course in Federal Constitutional Law. The lectures deal with the essential features of federal government in a comparative view of the leading federal States. Special attention is given to the constitutions of Canada, Australia, South Africa, and the United States. Text-books: Lefroy, Short Treatise on Canadian Constitutional Law, and Leading Cases in Canadian Constitutional Law; Kennedy's Canadian Constitutional Documents; Bryce, American Commonwealth (Vol. I.); Woodrow Wilson, Congressional Government; Poley's Federal Systems of the United States and the British Empire.

5. A course in English Constitutional Law, in which the distinctive features of the English Constitution, the Rule of Law and the Sovereignty of Parliament, the two Houses of Parliament, the Cabinet and its relation to the Crown and Parliament, the prerogative, the conventions, the Courts, and the position of the subject under English law, are the principal topics. Students are recommended to read: Dicey, Law of the Constitution; Anson, Law and Custom of the Constitution; Thomas' Leading Constitutional Cases; Law, Governance of England; Marriott's English Political Institutions; Ridge's Constitutional Law.

6. A course in Colonial Constitutional Law, in which the lectures deal with the various forms of colonial government with special reference to the self-governing colonies and to current problems. Students are recommended to read: Todd, Parliamentary Government in the Colonies (to page 318); Reinch's Colonial Government; and either Tarring, Law in Relation to the Colonies; Jenkyns, British Rule and Jurisdiction beyond the Seas; or the section on Colonies and Dependencies in Halsbury's Laws of England.

INTERNATIONAL LAW.

JOHN D. FALCONBRIDGE, M.A., LL.B.....*Lecturer.*

1. The nature, history and sources of international law. 2. The subjects of international law: the notion of sovereignty and the classification of states; the origin, continuity and extinction of states; the independence of states, self-preservation and intervention; the equality of states, the system of Europe and the Monroe Doctrine. 3. The objects of international law: territorial sovereignty and state territory; modes of acquiring territory; territorial, boundary and international waters; the open sea; jurisdiction; nationality and alienage. 4. International intercourse: international agents; treaties; negotiation, mediation and arbitration; forcible measures short of war. 5. War: general notions; immediate legal effect; enemy character of persons; rule of non-intercourse; laws of war with regard to enemy persons; enemy character of property and laws of war with regard to property; military occupation; enemy merchantmen, their crews and cargoes; prize courts; instruments and methods of naval warfare; non-hostile intercourse of belligerents. 6. Neutrality: nature and history; violation and cessation; neutralization; the obligations of a neutral state; the duties of prevention, abstention and impartiality; the rights of a neutral state; inviolability of territory, right of asylum, right of commerce; nationals of neutral state subject to state law and to rights of belligerent states; visit and search; contraband of war; blockade; unneutral service. 7. For reference: (1) general treatises: Hall, Westlake, Lawrence, Oppenheim; (2) cases and documents: Moore, Cobbett, Scott, Whittuck, Lawrence, Evans; (3) prize court decisions and official documents relating to the late war.

PHILOSOPHY.

UNIVERSITY OF TORONTO:

J. G. HUME, A.M., PH.D.....*Professor of History of Philosophy.*
G. S. BRETT, M.A.....*Professor of Philosophy.*
A. H. ABBOTT, B.A., PH.D.....*Associate Professor of Philosophy.*
W. G. SMITH, B.A.....*Assistant Professor of Psychology.*
T. R. ROBINSON, PH.D.....*Assistant Professor of Philosophy.*
E. J. PRATT, M.A., PH.D.....*Instructor in Psychology.*
E. A. BOTT, B.A.....*Lecturer in Philosophy.*
W. A. COOK, B.A.....*Assistant in Psychological Laboratory.*

UNIVERSITY COLLEGE:

F. TRACY, B.A., PH.D.....*Professor of Ethics.*

VICTORIA COLLEGE:

W. B. LANE, M.A., PH.D.....*Professor of Ethics.*
W. T. BROWN, M.A., PH.D.....*Lecturer in Ethics.*

TRINITY COLLEGE:

G. S. BRETT, M.A.....*Professor of Ethics and Ancient Philosophy*

ST. MICHAEL'S COLLEGE:

REV. H. CARR, B.A.....*Professor of History of Philosophy.*
REV. F. G. POWELL.....*Professor of Philosophy.*
M. DEWULF, M.A., PH.D., LL.D., *Professor of Mediæval Philosophy.*
SIR BERTRAM C. A. WINDLE, M.A., M.D., SC.D., LL.D., F.R.S.
Professor of Anthropology.
REV. F. D. MEADER, B.A.....*Professor of Ethics.*
REV. D. CUSHING, LL.D.....*Professor of Cosmology.*
REV. M. J. OLIVER, PH.M.....*Professor of Psychology.*
REV. E. J. McCORKELL, M.A.....*Lecturer in Ethics.*
P. M. O'SULLIVAN, M.A., M.B.....*Lecturer in Psycho-Physiology.*

First Year

IN THE COLLEGES—

1. Introductory Course in Philosophy—Ethics. One hour a week. Prescribed text: Johnston, An Introduction to Ethics.

Second Year.

IN THE COLLEGES—

2. Ethics, Elementary Course. Two hours a week. Lectures outlining the leading problems, standpoints, and schools of Ethics. Prescribed texts: (*a*) Seth, Ethical Principles, Part 1. (*b*) Selections from Hobbes, Locke, Shaftsbury, Butler.

IN THE UNIVERSITY—

3. An Introductory Course in Philosophy (General Course). Three hours a week. (*a*) An introductory course in Logic. One hour a week. Text: Creighton, Introductory Logic. (*b*) An introductory course in Psychology, similar in scope to Course 6. Two hours a week.

4. Logic. One hour a week. Introductory Course. Development of Logic among the Greeks. Texts: Plato, Theaetetus, Republic: Aristotle, Organon (Selections); Creighton, Introductory Logic.

5. History of Philosophy. Two hours a week. Texts: Locke, Essay on the Human Understanding. Berkeley, Principles of Knowledge.

6. Introduction to Psychology. Two hours a week. (*a*) Definition of subject in historical setting and the stages through which Psychology has passed until it reached the experimental stage. Relation of Psychology to other Sciences. (*b*) Methods of Investigation. Observation and the principles of Experiment and Analysis. Processes of human experience, their classification and analysis. Investigation of Perception, Memory, Association, Apperception, Emotion, Volition. (*c*) Problems of Thinking and the nature of Thought. Human and Animal Psychology. Variations in Behaviour. Questions of Normal and Abnormal. Individuals in Social Life and Problems of Social Psychology.

St. Michael's College.

SECOND YEAR.

7. Ethics, Elementary Course. Two hours a week.

8. An Introductory Course in Philosophy. Three hours a week.

9. Psychology, Elementary Course. Two hours a week.

10. History of Greek Philosophy. Two hours a week.

Third Year.

IN THE COLLEGES—

11. Social Ethics (General Course). Three hours a week. (1) Study of primitive morality, character of early societies, and lines of progress. (2) Greek morality as represented in Plato and Aristotle, with especial reference to (*a*) the intellectual ideals of Greece; (*b*) the development of democracy; (*c*) social conditions; (*d*) the expansion of Greek thought (Stoic and Epicurean systems), and the comparative study of Greek and Christian ideals. (3) Modern thought from Hobbes to Mill with special reference to (*a*) the transition from mediæval to modern thought; (*b*) the progress of individualism; (*c*) modern economic and social conditions in their ethical significance; (*d*) comparison of ancient and modern views of the state with reference to democracy. Prescribed texts for 1919-20: Plato, Republic, Books I-IV.; Aristotle Politics, Books I., VII., VIII.; Hobbes, Leviathan, Book I.; J. S. Mill, Utilitarianism. References: Darwin, Descent of Man; Maine, Ancient Law; Aristotle, Ethics; Rogers, Short History of Ethics; Brett, The Government of Man; J. G. Hume, Political Economy and Ethics; Dewey and Tufts, Ethics; James Seth, A Study of Ethical Principles.

The Examination will comprise two papers, (*a*) on the prescribed texts, (*b*) on theory and topics discussed in the lectures.

12. Ethics. Two hours a week. The ethics of naturalism; Hedonism, ancient and modern; Utilitarianism, Evolutionism; historical lectures and study of texts, with criticism. Prescribed texts: Hume, Enquiry Concerning the Principles of Morals; Bentham, Principles of Morals and Legislation, (Selections); Mill, Utilitarianism; Spencer, Data of Ethics. References: Watson, Hedonistic Theories; Albee, History of English Utilitarianism; Rand, Classical Moralists; Sidgwick, History of Ethics; Selby-Bigge, British Moralists; Rashdall, Theory of Good and Evil; Martineau, Types of Ethical Theory.

IN THE UNIVERSITY—

13. History of the Problems of Ancient and Modern Philosophy (General Course). Three hours a week.

14. Mediæval and Early Modern Philosophy. Three hours a week. Selections from Des-Cartes, Spinoza, Leibnitz, Hume.

15. Logic. Fifty hours. (*a*) Development of Logic from Aristotle to Bacon. (*b*) Empirical Logic and Scientific Methods. Texts: Bacon, Novum Organum and Advancement of Learning; Mill, J. S., A System of Logic; Hobhouse, Theory of Knowledge.

16. Psychology. Two hours a week. (*a*) Methods of Social Psychology. Investigation of Individuals in Social Relations. Social and Anti-Social Acts. (*b*) Norms and Variations, Psychopathics, Feeble-minded, Insane, Problems of Classification and Investigation. (*c*) Clinical Methods of Investigating Abnormals: Diagnosis, intelligence tests, history, method and results. (*d*) Social Investigations—Family and Personal History. Problems of Heredity, Environment, Disease, Crime, Tasks of Social Psychology.

17. Psychophysics. One hour a week. History of psycho-physical problems. Measurements applied to Mental processes. Law of Weber and Fechner's psycho-physical Law. Methods and interpretation of Weber's Law. Problems of Correlation. Laboratory Work for 17.

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THIRD YEAR.

18. A Course of Lectures in General Philosophy. Three hours a week.
19. Ethics, Social. Three hours a week.
20. Metaphysics. Two hours a week.
21. Logic. Three hours a week.
22. Mediaeval Philosophy. Three hours a week.

Fourth Year.

IN THE COLLEGES—

23. Modern Ethics. (General Course). Three hours a week. The lectures will be (*a*) Historical, tracing the rise and development of the leading problems of ethics, and the formation of the chief schools and systems, Hedonist, Intuitionist, etc.; (*b*) Expository and critical. Certain prescribed texts will be studied in the class, and their doctrines examined. For 1919-20 these texts will be: Hume, Enquiry Concerning the Principles of Morals; Spencer, Data of Ethics; Green, Prolegomena to Ethics; J. G. Hume, Young's Ethics of Freedom.

Two papers will be set at the final examination, one on the topics treated in the lectures, the other on the prescribed texts.

24. Ethics. Two hours a week. Rationalism and Idealism. (*a*) Exposition and criticism of the Ethics of Aristotle, Kant, and T. H. Green. (*b*) Discussion of Selected Problems in Ethics.

25. Social Ethics. Two hours a week. (1) The evolution of society; philosophy of social progress, its nature and the forces directing it. (2) Theories of the mutual relations of the state and the individual; grounds of political obligation. (3) Modern social conditions and problems. Texts: Fairbanks, Introduction to Sociology; Green, Theory of Political Obligation; Elwood, Sociology and Modern Social Problems.

IN THE UNIVERSITY—

26. History of the problems of Modern Philosophy with special reference to British Philosophy. (General Course). Three hours a week. Reference: Seth, English Philosophers and Philosophical Schools; Calkins, The Persistent Problems of Philosophy; Cushman, History of Philosophy, Vol. II.; Rand, Classical Philosophers.

27. Modern Philosophy. Three hours a week. Kant and Modern Systems, with special reading of Kant's Critique of Pure Reason.

28. Logic. (*a*) Michaelmas Term. Development of Modern Logic: historical and critical. (*b*) Easter Term. Students will be required to make independent studies of selected theories or works in the sphere of general logic (nature of knowledge, principles of investigation, method of philosophical criticism). Two hours a week.

29. Psychology. Investigations of the Data of Sight and Hearing, relations of these to the complex process of Memory, Association, Imagination, Speech, Language, and Intelligence. Two hours a week. Laboratory work to familiarize students with methods of investigation in the above.

30. History of Psychology in its outstanding definitions to show the various phases through which Psychology has gone to the experimental stage, and its relation to other Sciences. One hour a week.

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FOURTH YEAR.

31. A Course of Lectures in General Philosophy. Three hours a week.
32. Epistemology. Three hours a week.
33. Special Questions in Metaphysics.
34. Special Questions in Psychology.
35. Modern Philosophy.
36. Ethics, Social. Three hours a week

MATHEMATICS.

ALFRED BAKER, M.A., LL.D.....*Professor.*
A. T. DELURY, M.A.....*Professor.*
M. A. MACKENZIE, M.A.....*Professor.*
J. C. FIELDS, B.A., PH.D., F.R.S.....*Professor.*
S. BEATTY, PH.D.....*Assistant Professor.*
I. R. POUNDER, M.A.....*Lecturer.*
B. SADOWSKI, B.A.....*Fellow.*

1. Algebra: Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; elementary treatment of variation, proportion and progressions; interest forms and annuities. Text-book: DeLury, Intermediate Algebra. Twenty-five hours.

2. Algebra: A course, supplementary to 1, permutations, combinations and binomial theorem. Fifteen hours.

3. Algebra: A course as outlined in 1 and 2, and in addition limits, infinite series, and the exponential and logarithmic series, for students in the Faculty of Applied Science. Fifty hours.

4. Analytical Geometry: A course in elementary analytical geometry of two dimensions, establishing the more important properties of the conic sections. Text-book: Baker. Analytical Geometry for Beginners. Twenty-five hours.

5. Analytical Geometry: A course similar to 4, for students in the Faculty of Applied Science. Twenty-five hours.

6. Plane Trigonometry: Trigonometrical ratios with their relations to one another: sines, etc., of the sum and difference of angles, with deduced formulas; solution of triangles, expressions for the area of triangles; radii of circumscribed, inscribed and escribed circles. Hall and Knight, Elementary Trigonometry. Twenty-five hours.

7. Plane Trigonometry: A course similar to 6 for students in the Faculty of Applied Science. Twenty-five hours.

8. Analytical Geometry: The more advanced course. Text-books: C. Smith, Conic Sections; Salmon, Conic Sections. Fifty hours.

9. Algebra: The more advanced course. Text-books: Hall and Knight, Higher Algebra; C. Smith, Treatise on Algebra; Chrystal, Algebra. Fifty hours.

10. Plane Trigonometry: The more advanced course. Text-books: Todhunter and Hogg, Plane Trigonometry; Hobson, Trigonometry. Fifteen hours.

11. Spherical Trigonometry. Text-books: Todhunter and Leatham, Spherical Trigonometry. Ten hours.

12. Differential and Integral Calculus: In the Second Year the elementary course in differential and integral calculus is designed to afford such knowledge of the character, methods and place in science of this important subject as educated men should possess, and also to enable students in chemistry, engineering, etc., to understand those text-books in which the calculus is introduced. Fifty hours.

13. Differential Calculus: The more advanced course. Text-books: Williamson, Differential Calculus; Kiepert, Differential-Rechnung; Gibson, Calculus. Fifty hours.

14. Integral Calculus: The more advanced course. Text-books: Williamson, Integral Calculus; Kiepert, Integral-Rechnung. Fifty hours.

15. Solid Geometry. Text-books: C. Smith, Solid Geometry; Frost, Solid Geometry. Fifty hours.

16. Newton's Principia. Section I. Text-books: Evans' Main's Principia; Frost's Principia. Fifteen hours.

17. Theory of Equations, including Determinants. Text-book: Burnside and Panton, Theory of Equations. Fifteen hours.

18. Differential Equations: The elementary course. Fifteen hours.

19. Differential Equations: The advanced course. Text-book: Johnson, Differential Equations; Forsyth, Differential Equations. Fifty hours.

20. Higher Plane Curves: With Introductory course in Modern Geometry. Text-books: Salmon, Higher Plane Curves; Clebsch, Vorlesungen über Geometrie. Twenty-five hours.

21. Quaternions with outlines of other Space Analyses. Text-books: Kelland and Tait, Quaternions; Joly, Manual of Quaternions; Tait, Quaternions. Fifty hours.

22. Invariant Theory. Text-books: Salmon, Higher Algebra; Elliott, Algebra of Quantics; Gordan, Invariantentheorie; Grace and Young. Algebra of Invariants. Fifty hours.

23. Theory of Numbers. Text-books: Mathews, Theory of Numbers; Dirichlet, Zahlentheorie (fourth edition). Fifty hours.

24. Theory of Substitutions. Text-books: Netto, Theory of Substitutions Weber, Lehrbuch der Algebra. Fifty hours.

25. Elementary Theory of Functions. Text-books: Harkness and Morley, Introduction to Analytic Functions; Forsyth, Theory of Functions. Fifty hours.

26. Elliptic Functions. Text-books: Appell and Lacour, Fonctions Elliptiques. Fifty hours.

27. Tangential Co-ordinates or Trilinear Co-ordinates. Text-books, Papelier, Coordonnées Tangentielles; Ferrers, Trilinear Co-ordinates. Fifty hours.

28. Modern Synthetic Goemetry. Text-books: Reye, Geometry of Position (translated by Holgate); Cremona, Projective Geometry; Lachlan, Modern Pure Geometry; Durell, Plane Geometry for Advanced Students; Veblen and Young, Projective Geometry. Fifty hours.

29. Theory of Probability. Text-book: Article on "Probability" in the eleventh edition of the Encyclopædia Britannica. Twenty-five hours.

Course 29 is an alternative course for Course 9, Actuarial Science, offered for those students of the Fourth Year who have not taken Actuarial Science in the earlier years.

MECHANICS.

W. J. LOUDON, B.A. ..... *Professor.*

1. Elementary Mechanics: A course of 15 lectures, twice a week during Michaelmas term.

2. Elementary Statics and Dynamics: A course of 40 lectures, three times a week during the Easter term.

3. Advanced Statics: A course of 35 lectures, three times a week during Easter term.

4. Particle Dynamics: A course of 25 lectures, twice a week during Michaelmas term.

5. Rigid Dynamics: A course of 25 lectures, twice a week.

6. Celestial Mechanics: A course of 25 lectures, twice a week.

7. Method of Least Squares: Once a week during the Easter term.

8. Dynamics of Rotation: A course of 40 lectures, once a week.

9. Principles of Mechanics: For students taking the Second Year of the course in Commerce and Finance. Fifteen lectures.

ACTUARIAL SCIENCE.

M. A. MACKENZIE, M.A.....*Professor.*

1. Arithmetic: Decimals, interest and discount, annuities certain, bond values, etc. Twenty-five hours.

2. Elementary Mathematics of Statistics. Twelve hours.

3. Accounting: An introductory course in general principles. Twenty-five hours.

4. Accounting, advanced: A critical examination of the Theory and Practice of Accounting and the preparation of financial statements. Twenty-five hours.

5. The Elements of the Theory of Life Annuities and Life Assurances. Twenty-five hours.

6 Finite Differences: Elementary methods and formulæ. Twelve hours.

7. The Theory of Interest: An advanced course. Twelve hours.

8. The Theory ot Life Contingencies: An advanced course, Part I. Twenty-five hours.

9. The Theory of Life Contingencies: An advanced course, Part II. Twenty-five hours.

ASTRONOMY

C. A. CHANT, M.A., PH.D.....*Professor of Astrophysics.*
F. L. BLAKE.....*Assistant.*
J. P. HENDERSON, M.A.....*Assistant.*
W. W. SHAVER.....*Class Assistant.*
F. B. KEACHIE.....*Class Assistant.*

1. Descriptive Astronomy: A course of fifty lectures, intended specially for students in the General Course. Twice a week. Text-book: Todd, New Astronomy.

2. Elementary Practical Astronomy: Intended to accompany 1. Consisting of observation (including photography) of the heavenly bodies; together with exercises in simple astronomical measurements and in the use of almanacs, globes, star-maps, photographs, etc. Two hours a week, in afternoon or evening as arranged. Text-book: Whiting, Exercises in Astronomy.

3. Elementary Astronomy: A course intended specially for students in the Science courses. Fifty lectures, twice a week. Text-book: Young, Manual of Astronomy.

4. Astronomy: a more advanced course. Text-books: Andoyer, Cours d'Astronomie, tome i; The Nautical Almanac. For reference: Godfray, Astronomy; Chauvenet, Spherical Astronomy. Forty hours, twice a week.

5. Practical Astronomy: Observations with the equatorial telescope, the transit instrument and the sextant. Two evenings a week. By courtesy of the director of the Meteorological Observatory the astronomical instruments there are used by the students of the University. Text-book: Campbell, Practical Astronomy.

6. Computation Course: A course for the discussion of astronomical observations and for computation, associated with Course 5. Two hours a week.

7. Introduction to Astrophysics: A course of fifty lectures, twice a week. Text-books: Scheiner, Astronomical Spectroscopy; Baly, Spectroscopy; Salet, Spectroscopie Astronomique.

8. Practical Astrophysics: A laboratory course to accompany Course 7. One afternoon a week in the Michaelmas and two in the Easter term.

9. Celestial Mechanics (see under Mechanics, p. 122).

10. Method of Least Squares (see under Mechanics, p. 122).

PHYSICS.

J. C. McLENNAN, PH.D., F.R.S., O.B.E., *Professor and Director of the Physical Laboratory.*
E. F. BURTON, B.A., PH.D. ..... *Associate Professor.*
LACHLAN GILCHRIST, M.A., PH.D. ..... *Assistant Professor.*
JOHN SATTERLY, M.A., D.Sc., A.R.C.Sc. ... *Assistant Professor and Assistant Director of Undergraduate Laboratory Work.*
H. A. McTAGGART, M.A. ..... *Lecturer*
H. F. DAWES, M.A., PH.D. ..... *Special Lecturer.*
R. C. DEARLE, M.A., PH.D. ..... *Demonstrator.*
Miss E. L. BISHOP, M.A. ..... *Assistant Demonstrator.*
Miss A. W. FOSTER, M.A. ..... *Assistant Demonstrator.*
S. McLEAN, M.A. ..... *Assistant Demonstrator.*
Miss H. C. MILLER, B.A. ..... *Assistant Demonstrator.*
E. R. I. PRATT, B.A. ..... *Assistant Demonstrator.*
Miss F. M. QUINLAN, M.A. ..... *Assistant Demonstrator.*

J. C. THOMPSON, B.A.....*Assistant Demonstrator.*
J. F. TWISS, B.A.....*Assistant Demonstrator.*
Miss H. I. EADIE.....*Class Assistant.*
Miss I. B. GILES.....*Class Assistant.*
Miss M. I. MACKEY.....*Class Assistant.*
Miss A. T. REED, B.A.....*Class Assistant.*
Miss M. E. LOWREY, B.A.....*Class Assistant.*

The work of instruction in Physics consists of a series of courses of lectures and of practical work in the laboratories, which are embodied in the following schedule:

1. A course of fifty lectures on Properties of Matter, Mechanics, Hydrostatics and Heat. These lectures are illustrated by experiments. Text-books: Eggar, Mechanics; Wagstaff, Properties of Matter; Stewart and Satterly, Text-book of Heat.

2. Properties of Matter, Mechanics, Hydrostatics and Heat: A laboratory course of seventy-five hours, one afternoon a week, throughout the year, designed to illustrate the lectures in Course 1 in Physics, and Course 1 in Mechanics. Text-books: Allen and Moore, Text-book of Practical Physics; Stern and Topham, Practical Mathematics; Ashford, Elementary Experimental Dynamics; F.R.S. (S. P. Thompson), Calculus Made Easy.

3. Elementary Magnetism and Electricity: A course of thirty-five lectures, given in two divisions 3*a* and 3*b*. Text-books: Hadley, Magnetism and Electricity for Students; Sylvanus Thompson, Electricity and Magnetism; Brooks and Poyser, Electricity and Magnetism; Watson, A Text-book of Physics; Stewart, Electricity and Magnetism; Hutchinson, Advanced Magnetism and Electricity.

4. Elementary Light: A course of twenty-five lectures, one a week beginning in the Michaelmas term. Text-books: Stewart and Satterly, Text-book of Light; Edser, Light for Students; Watson, A Text-book of Physics.

5. Elementary Acoustics: A course of fifteen lectures, one a week. Text-books: Catchpool, Text-book of Sound; Poynting and Thomson Sound; Watson, A Text-book of Physics; D. C. Miller, The Science of Musical Sounds.

The lectures in Courses 3*a*, 3*b*, 4 and 5 are illustrated by experiments.

6. Magnetism, Electricity, Light and Acoustics: A laboratory course of one hundred and fifty hours, two afternoons a week throughout the year, designed to illustrate the lectures in Courses 3*a*, 3*b*, 4 and 5. Text-books: Allen and Moore, Text-book of Practical Physics; Carhart and Patterson, Electrical Measurements; Edser, Light for Students; Clay, Treatise on Practical Light; Catchpool, Sound.

7. A course of lectures one hour a week on Mathematics as applied to the solution of Physical Problems including the simple use of the Calculus. Text-book: Stern and Topham, Practical Mathematics; S. P. Thompson, Calculus Made Easy; Perry, Calculus for Engineers; Tuttle, The Theory of Measurements.

8. A series of lectures, being a portion of the first year Pass Course, on the principles and application of Science.

9. A course of lectures and laboratory work, four hours a week, for second year pass students. This course includes Properties of Matter, Mechanics, Hydrostatics, and Heat. The lectures will deal with simple measurements, energy, gravitation and the pendulum, the general properties of solids, liquids and gases such as elasticity, viscosity and capillarity, the determination of fluid pressures, specific gravity and the theory and use of common forms of pumps, barometers, etc.; the thermal characteristics of various substances, including expansion, various thermometers, specific and latent heat and calorimetry; the phenomena observable during the change of state of substances from one form to the other; conduction, radiation, heat and energy, the first and second laws of thermodynamics, engines; the liquefaction of gases and liquid air, the kinetic theory of matter.

10. A course of lectures and laboratory work, four hours a week, for third year pass students. This course includes work in light and acoustics, and consists of a general explanation of wave motion, the reflection, refraction and diffraction and interference phenomena connected with wave motion; the production, propagation, and detection of sound waves; tuning forks, organ pipes and vibrating strings; various musical scales; analysis of complex sounds, the ear and voice; a study of mirrors, prisms and lenses; the eye, microscope, telescope and other optical instruments; dispersion, colour and spectroscopy; interference and diffraction; double refraction and polarisation; theories of light.

11. A course of lectures and laboratory work, four hours a week, for fourth year pass students. This course will consist of lectures and laboratory work in electricity and magnetism, including recent developments, such as radioactivity and radiology; laws of magnetism, static electricity, condensers, electrical conduction in solids, liquids and gases, voltaic cell, chemical, magnetic and heating effect of the electrical current, potential; Ohm's law and its application, laws of electrical resistance, electromotive forces, induced currents, the induction-coil, alternating and high frequency currents, electrical waves, X-rays and radioactivity.

12. Applications of the theory of Potential to Physics: A course of forty lectures.

13. Properties of Matter: A course of lectures, two a week beginning in the Michaelmas term. Text-books: Poynting and Thomson, Properties of Matter; Tait, Properties of Matter; Edser, General Physics.

14. Geometrical Optics: A course of lectures in the Michaelmas term. Text-book: Houston, A Treatise on Light; Heath, Geometrical Optics.

15. Advanced Heat and Elementary Thermodynamics: A course of lectures, two a week for fifteen weeks. Text-books: Edser, Heat for Advanced Students; Hart, A Student's Heat; Preston, Heat; Griffiths, Thermal Measurement of Energy.

16. Thermodynamics: A course of lectures during the Michaelmas term, on thermometry and pyrometry, the gas equations and the fundamental principles of thermodynamics. Text-books as for Course 15.

17. A laboratory course on the accurate determination of physical constants, together with practice in laboratory arts. This course involves about one hundred and fifty hours' laboratory work. Text-books: Allen and Moore, Text-book of Practical Physics; Watson, A Text-book of Practical Physics; Searle, Simple Harmonic Motion; Searle, Experimental Elasticity; Tuttle, Theory of Measurements.

18. A course of practical instruction in mathematical drawing, graphs and their applications, calculations and their accuracy, and statistics. Textbook: Tuttle, Theory of Measurements.

19. A course of lectures one a week throughout the year on Radiation, Structure of Matter and Atomic Theories, with a laboratory course of two hours a week.

20. Theory of Optics: A course of lectures twice a week throughout the year. Text-books: Drude, Theory of Optics; Mann, Manual of Advanced Optics; Baly, Spectroscopy; Wood, Physical Optics; Schuster, Theory of Optics; Houston, A Treatise on Light.

21. Elasticity: A course of lectures, two a week throughout the year dealing with the mathematical theory of elasticity with application to the theory of double refraction and polarisation of light. Text-books: Poynting and Thomson, Properties of Matter; Christiansen, Elements of Theoretical Physics; Pellat, Polarisation et Optique Crystalline.

22. Fourier's Series: A course of lectures during the Michaelmas term on Fourier's Series and its applications to Physics. Text-books: Donkin, Acoustics; Byerly, Fourier's Series and Spherical Harmonics; Barton, A Text-book on Sound; Carse and Shearer, Fourier and Periodogram Analysis.

23. Thermodynamics: A course of twenty lectures. Text-books: Poynting and Thomson, Heat; Partington, Thermodynamics; Maxwell, Heat.

24. Hydromechanics: A course of lectures during the Easter term. Text-books: Minchin, Hydrostatics; Besant, Hydro-mechanics; Lamb, Hydrodynamics; Barton, Mechanics of Fluids.

25. Colloidal Solutions: A course of lectures on the physical properties of colloidal solutions. Text-books: Cotton and Mouton, Les ultra-microscopes et les objets ultramicroscopiques; Burton, Colloidal Solutions.

26. A course of lectures on Electricity and Magnetism including the Electromagnetic Theory of Light, Electron Theory of Matter, Dispersion, Absorption, Polarisation, Magneto-Optics, Electrical Oscillations, Conduction of Electricity in Gases, and Radioactivity. Text-books: J. J. Thomson, Elements of Electricity and Magnetism, Recent Researches in Electricity and Magnetism, Conduction of Electricity through Gases;

Abraham and Langevin, Ions, Electrons, Corpuscles; Drude, Theory of Optics; Lorentz, The Theory of Electrons; N. R. Campbell, Modern Electrical Theory; Rutherford, Radioactive Substances and their Radiations; Starling, Electricity and Magnetism; Millikan, The Electron.

27. A laboratory course designed as an extension of Course 17, and as an introduction to research work. A seminar is held once a fortnight in connection with this course, under the supervision of the Director of the Laboratory, at which reports on papers in the current physical journals are presented and discussed.

28. A course of lectures and laboratory work, four hours a week in the Easter term, specially designed for students in the first year pass Household Science course. Textbook: Brown, Experimental Science, Part 1, Physics.

29. A course of lectures and laboratory work on Acoustics, three hours a week, beginning in the Michaelmas term. Textbook: Catchpool, Textbook of Sound.

Regulations.—*Deposit Fee:* Each student taking laboratory course 2, 6, 10, 11, 17, or 28 is required to make a deposit of three dollars ($3.00) before beginning work. All supplies, apparatus broken or destroyed and all fines will be charged against this deposit, which must be renewed when exhausted. At the close of the session cash balances will be returned on a day appointed for the purpose.

Additional Text-books.

General Physics: White. Watson, Ganot, Kimball, Hastings and Beach Deschanel (ed. Everett), Jamin, Violle, Nichols and Franklin, Barlow, Thomson and Tait, Lehfeldt, Millikan, Mann and Twiss, Daniell, H. A. Wilson, Houston (An Introduction to Mathematical, Physics), Duncan and Starling.

Elementary Mechanics: Ashford, Lock, Glazebrook, Briggs and Bryan, Magnus, Loney, Garnet; Satterly (Measurements and Mechanics).

Elementary Hydrostatics: Glazebrook, Briggs and Bryan, Loney.

Elementary Mechanics and Heat: Gregory and Hadley.

Elementary Heat: Glazebrook, Stewart, Tyndall, Balfour Stewart, Tait, Draper, Darling, Scarlett, Stewart and Satterly. (Heat for Engineers).

Elementary Light: Stewart and Satterly, Jones, Tyndall, Tait, Wright, Glazebrook, Emtage.

Elementary Electricity and Magnestim: Poyser, Glazebrook, Lehfeldt, Cumming, Day, Ashford, Wagstaff, Hutchinson, Ashford and Kempson.

Sound: Tyndall Taylor, Capstick, Zahm.

Geometrical Optics: Herman, Aldis, Heath, Parkinson, Percival, Whittaker, Leathem, Searle, Southall, S. P. Thompson (Optical Tables and Data).

Household Science: Hale, Lynde.

Mechanics: Perry (Applied Mechanics), Barton, Cox, Thomson and Tait, Lamb.

Hydromechanics: Greenhill, Basset.

Sound (or Acoustics): Donkin, Rayleigh, Helmholtz, Airy, Koenig, Lamb.

Elasticity: Williamson, Lamb, Ibbetson, Love, Todhunter, Searle.

Physical Optics: Drude, Jamin, Verdet, Basset, Glazebrook, Maclaurin, Mascart, Schuster, Wood, Preston, Poynting (Pressure of Light).

Heat and Thermodynamics: Clausius, Buckingham, Parker, Whetham, Planck, Preston, Maxwell, Tait, Partington, Donnan, Lewis (Physical Chemistry), Gibbs. Ewing (The production of cold); Ewing (The Steam Engine), Hobbs (The Thermo-dynamics of engine design); Claude (Liquid Air, Oxygen, Nitrogen); Darling (Pyrometry), Le Chatelier.

Properties of Matter: Meyer, Kinetic Theory; Jeans, Dynamical Theory of Gases; Darling, Liquid Drops and Globules; Tait, Properties of Matter; Edser, General Physics; Findlay, Osmotic Pressure; Philip, Physical Chemistry; Boys, Soap Bubbles; Willows and Hatchek, Surface Tension.

Electricity and Magnetism; Poynting and Thomson, Emtage, Maxwell, Mascart and Joubert, Gray, Heaviside, DuBois, Foster and Porter, Webster, Strutt, Soddy, Fournier d'Albé, Eccles, Barlow (Mathematical Physics, Vol. 1); Kapp, Whetham; James (Alternating Currents); Drysdale (Alternating Currents).

Relativity: Conway, Cunningham, Robb, Silberstein, Tolman.

Modern Theories: Comstock and Troland, Duncan, Bragg (X-rays and Crystal Structure), Soddy, Kaye (X-rays), J. J. Thomson, Rutherford.

Practical Physics: Loudon and McLennan, Bower and Satterly, Stewart and Gee, Barnes, Glazebrook and Shaw, Kohlrausch, Ayrton, Nichols, Findlay, Watson, Schuster and Lees, Searle, Clay (Light), Tuttle (An Introduction to Laboratory Physics).

Practical Mathematics (and Mechanics): Clarke, Saxelby, Castle, Carse and Shearer (Periodogram analysis); Gibson (Graphs); Minchin and Dale, Stern and Topham, Perry.

Calculus (suitable for Physics students): Edwards, Edser, Lodge, Proctor, Blaine, Mercer, Perry (for Engineers), Gibson, Mellor (Higher Mathematics for students of Physics and Chemistry), Graham, Ormsby, Godfrey and Siddons, Love.

Theory of Measurements and Errors: Lupton, Stevens, Macgregor, Goodwin, Tuttle, Holman, Merriman, Johnson.

Mathematical and Physical Tables: Bottomley, Castle, Clarke, Chambers, Dale, Hall, Kaye and Laby, Macfarlane, McAulay, the Smithsonian, Longley, Woodward.

The Slide Rule: Blaine, Dunlop and Jackson.

BIOLOGY.

R. R. WRIGHT, M.A., D.Sc., LL.D.....*Professor Emeritus.*
B. A. BENSLEY, B.A., PH.D.....*Professor of Zoology.*
W. H. PIERSOL, B.A., M.B.....*Associate Professor of Histology.*
E. M. WALKER, B.A., M.B.....*Associate Professor of Biology.*
A. G. HUNTSMAN, B.A., M.B.....*Associate Professor of Marine Biology.*
A. F. COVENTRY, B.A.....*Lecturer in Vertebrate Embryology.*
W. A. CLEMENS, M.A., PH.D.....*Lecturer in Elementary Biology.*
B. S. CORNELL, M.A.....*Lecturer in Comparative Anatomy.*
E. H. CRAIGIE, B.A.....*Demonstrator in Biology.*
N. K. BIGELOW, B.Sc.....*Assistant in Systematic Biology.*
M. D. MCKICHAN, B.A., M.B. .....*Temporary Assistant in Embryology.*
MISS N. H. C. FORD, B.A....*Special for Household Science in the Department of Biology.*
MISS E. D. BAWDEN.....*Class Assistant.*
J. H. COTTON, M.A., M.D.....*Class Assistant.*
G. S. EADIE, B.A.....*Class Assistant.*
C. W. HARRIS.....*Class Assistant.*
A. ISAACSON, M.B.....*Class Assistant.*
A. H. LEIM.....*Class Assistant.*
R. J. P. MCCULLOCH, M.B.....*Class Assistant.*
J. M. MACDONALD, M.D., C.M.....*Class Assistant.*
A. G. MCPHEDRAN, B.A., M.B.....*Class Assistant.*
R. S. STONE.....*Class Assistant*
H. G. WILLSON, B.A., M.B.....*Class Assistant.*
MISS E. W. PARK, B.A.....*Preparator.*
E. B. S. LOGIER.....*Museum Assistant and Cataloguer.*

Courses extending over only the Michaelmas or the Easter term are indicated as (m) ***and*** (e) ***respectively.***

With the exception of Course I, the lectures and practical instruction in this department are given in the University Biological Building. The instruction includes courses in General Biology, Zoology, Comparative Anatomy, Histology and Embryology, these courses being indicated in the various prescriptions as Zoology 1, 2, 3, etc.

The lectures and practical instruction in this subject are given in the University Biological Building.

For supplementary reading, except as specified below, the General Reading List of the Department may be consulted.

The following courses are provided:

A.—IN THE FACULTY OF ARTS.

PASS COURSES.

1. Elementary Science: A course of seventy-five lectures on the general principles and applications of science. This is a co-operative course, given by various members of the scientific departments, and is open to all students covering the requirement of Pass Science in the First Year of the Faculty of Arts.

2. Elementary Biology: (*a*) A general educational course of two hours a week on the principles of science as applied to living organisms. The instruction is chiefly zoological, emphasis being placed upon the history of animal types and upon the biological aspects of the nature and social development of mankind. (*b*) A practical course of fifty hours in illustration of the principles and laboratory methods of Biology.

3. Invertebrate Zoology: A course of one hundred hours lectures and laboratory work on the elements of the principal branches of zoology as applied to the lower animals.

4. Vertebrate Zoology: A course of one hundred hours lectures and laboratory work on the principal branches of zoology as applied to vertebrates, with special reference to those of human application.

HONOUR COURSES.

5. Elementary Zoology: A course of two lectures a week throughout the Easter term on the nature, structure and classification of animals. For Honour Science students.

6. Elementary Zoology: A laboratory course of seventy-five hours on the general structure of the animal body, its organs and tissues and their functions; principles of adaptation, specialisation, and homology, based on selected types. Text-book: Parker & Parker, Elementary Practical Zoology. For reference: Parker and Haswell, Text-book of Zoology (e).

7. Comparative Anatomy: A laboratory course of one hundred and fifty hours, comprising dissection and comparative study of selected vertebrate types: Part 1, Mammalian Anatomy (m); Text-book: Bensley, Anatomy of the Rabbit; Part 2, Anatomy of Lower Chordates (e). For reference: Parker, Zootomy; Kingsley, Vertebrate Zoology; Parker & Haswell, Text-book, Vol. 2; Wiedersheim, Comparative Anatomy, Reynolds, Vertebrate Skeleton; Kingsley, Comparative Anatomy.

8. Vertebrate Zoology: A course of fifty lectures on the system, structure and history of the vertebrates. For reference, as above (5); Gadow, Classification of Vertebrata; Smith Woodward, Vertebrate Palæontology.

9. Invertebrate Zoology: A course of twenty-five lectures and fifty hours laboratory work on the system and morphology of the invertebrates. Text-book: Parker and Haswell, Vol. I. (m).

10. A course on the anatomy and histology of selected vertebrate types and on the natural history of animal foods. For Household Science students (m).

11. A special course in Invertebrate Zoology, dealing chiefly with those groups which include parasitic forms. For reference: Parker & Haswell, Text-book of Zoology, Vol. I. Fantham, Stephens and Theobald, Animal Parasites of Man; Riley and Johannsen, Medical Entomology; Doane, Insects and Disease; Chandler: Animal Parasites and Human Disease. Seventy-five hours (m).

12. Zoological Collection: Students entering the Third Year in the special course of Biology are required to submit, as evidence of field proficiency, a collection of invertebrate animals from a prescribed group, together with an essay on the characters and habits of the forms collected. Special directions may be had on application to the Biological Department.

13. Vertebrate Embryology: A course of twenty-five lectures on the general embryology of the vertebrates (e).

14. A lecture and laboratory course of one hundred hours on vertebrate histology and cytology, including histological technique (m).

Text-books: Piersol, Normal Histology, 8th edition; Böhm, v. Davidoff and Huber, Text-book of Histology, 2nd edition. For reference: Prenant, Bouin, Maillard, Traité d'Histologie; Schäfer, Text-book of Microscopic Anatomy.

15. History and Theory of Biology: An opportunity is afforded to advanced students to become acquainted with the main problems of biology and with the history of the subject. The library is provided with the various works for consultation, a statement of which will be found in the departmental reading list, and a course of vacation reading is prescribed.

16. Vertebrate Embryology: A laboratory course of one hundred hours on the general embryology of the vertebrates and on the special embryology of the mammalia. For reference: Jenkinson, Vertebrate Embryology; Hertwig, Lehrbuch der Entwickelungsgeschichte; Lillie, Development of the Chick; Bailey and Miller, Embryology; Kellicott, Embryology; Prentiss, Text-book of Embryology.

17. Special Embryology of the Mammalia: A laboratory course of fifty hours on human embryology. For reference: Minot, McMurrich, Kollmann, Keibel and Mall (e).

18. Structural Neurology: A short course of lectures and laboratory work on the structure and development of the vertebrate nervous system. For reference: Edinger, Anatomy of the Nervous System; Herrick, Introduction to Neurology.

19. Zoological Collection: Students entering the Fourth Year in any one of the subdivisions of Biology are required to submit a collection of vertebrate animals from specified groups, together with an essay on the characters and habits of the forms collected. For reference: Jordan, Manual of Vertebrates.

20. A lecture and laboratory course of one hundred hours on general invertebrate and vertebrate histology and cytology, including histological technique.

Text-book: Dahlgren and Kepner, Principles of Animal Histology. For reference: Wilson, The Cell in Development and Inheritance; Gurwitsch, Morphologie und Biologie der Zelle: Schneider, Histologie der Thiere; Prenant, Bouin, Maillard, Traité d'Histologie (Vol. I., Cytologie)

21. Vertebrate Zoology: A practical course of one hundred hours of laboratory and museum work on the morphology, classification and distribution of the vertebrates. For reference: Gadow, Classification of Vertebrates; Flower and Lydekker, Mammals Living and Extinct; Lydekker, Geographical History of Mammals; Cambridge Natural History, Vols. vii-x; Reynolds, The Vertebrate Skeleton; Flower, Osteology of the Mammalia; Smith Woodward, Outlines of Vertebrate Palæontology; Parker and Haswell, Vol. 2; Willey, Amphioxus; Wiedersheim, Comparative Anatomy.

22. Advanced Invertebrate Zoology: A course of one hundred hours of lectures, laboratory and museum work on the morphology, embryology, classification and distribution of the invertebrates. This course is also designed to give training in laboratory methods and microscopic technique. For reference: Parker and Haswell, Vol. I.; Hertwig's Zoology, edited by Kingsley; Cambridge Natural History, Vols. I.-VI.; Korschelt and Heider, Embryology; Schneider, Histologie der Thiere; selected papers; Lee, Microtomist's Vade Mecum; Guyer, Animal Micrology.

23. A special course of one hundred hours on the system and natural history of animals, with special reference to those of Ontario or of Canada.

24. Students in the Third and Fourth Years of the Special Course in Biology will be expected to show a reading knowledge of French and German.

Research: The members of the staff in this department are prepared to suggest problems for investigation in certain branches and to provide materials and laboratory facilities for properly qualified students. See "Announcement of Graduate Courses".

B.—Courses in the Faculty of Medicine.

In addition to the course of lectures No. 13, which is common to students in Arts and Medicine, the following special courses are offered:

25. Elementary Biology, 50 lectures on the general principles of Biology and on special topics of interest to medical students.

26. A laboratory course of fifty hours in which types of special interest to Medical students are studied and which serves as an introduction to the use of the microscope.

27. A course of twenty-five explanatory lectures is given in connection with the foregoing laboratory course.

28. A course of seventy-five hours of laboratory work on Mammalian Anatomy is given as an introduction to Human Anatomy (m).

29. A course of twenty-five lectures on Histology.

30. A laboratory course on General Histology. Fifty hours.

31. A short laboratory course on Embryology. Twenty-five hours (e).

32. A laboratory course on Human Microscopic Anatomy. Fifty hours (m).

C.—COURSES IN FACULTY OF APPLIED SCIENCE.

In addition to Course 2, which is taken by Applied Science Students, the following special courses are provided:

33. A lecture and laboratory course of forty hours serving as an introduction to the use of the microscope, especially in regard to the study of living tissues and their products (e).

D.—COURSES IN FACULTY OF FORESTRY.

In addition to course or part of Course 2, which may be taken by students in Forestry, the following special course is provided:

34. Economic Entomology; twenty-five lectures and fifty hours laboratory work (e). Text-book: Sanderson and Jackson, Elementary Entomology.

BOTANY.

J. H. FAULL, B.A., PH.D.....*Professor.*
R. B. THOMSON, B.A.....*Associate Professor.*
C. D. HOWE, M.A., PH.D.....*Associate Professor.*
J. H. WHITE, M.A., B.Sc.F., PH.D.....*Assistant Professor.*
MISS J. MCFARLANE, M.A.....*Demonstrator.*
MISS J. G. WRIGHT, M.A.....*Demonstrator.*
G. H. DUFF, M.A.....*Assistant in Botany.*
MISS L. V. BAKER, M.A.....*Technical Assistant.*
A. W. MCCALLUM, M.A., B.Sc.F.....*Assistant in Botany.*
I. L. CONNOR, B.A.....*Assistant in Botany.*

Courses extending over only the Michaelmas or the Easter term are indicated as (m) and (e) respectively.

The lectures and practical instruction in this subject are given in the Botany and Forestry Building.

The following courses are provided:

A.—IN THE FACULTY OF ARTS.

1. Composite Science Course. See p. 129.

2a. Elementary Biology: An introductory course of two hours a week on the general principles of Biology from the botanical point of view. Text-book: Bergen and Caldwell, Introduction to Botany (N. & Cent. U.S. Edition). For reference: Kerner and Oliver, Natural History of Plants.

2b. A laboratory course of two hours a week in connection with Course 2a.

3. A lecture and laboratory course dealing with the general characteristics of each of the great primary divisions of the vegetable kingdom, with the general course of evolution within these divisions, and their relationships one to the other, with the typical habits and distribution of the plants of each group and their place in the economy of nature and of man. Four hours a week. Text-book: Curtis, Nature and Development of Plants.

4. A lecture and laboratory course on economic plants (food, fibre, ornamental, etc.), on the principles of their culture and propagation, including studies on plant hybridization, selection, etc., and on the adaptive relationships of plants. Four hours a week.

5. Elementary Botany: A course of twenty-five lectures on the life, structure, and classification of plants. Text-book: Curtis, Nature and Development of Plants. For reference: Coulter, Barnes and Cowles, Text-book of Botany; Ganong, A Text-book of Botany for Colleges; Kerner and Oliver, Natural History of Plants (m).

6. A laboratory course of fifty hours in connection with Course 5 (m).

7. Phanerogamic Botany: A course of twenty-five lectures and fifty hours laboratory work on the anatomy and morphology of the flowering plants. Text-book: Strasburger, Jost, Schenck, and Karsten, Text-book of Botany, 4th English Edition (1912), and Gray's New Manual of Botany. For reference: Coulter, Seed-Plants; Britton and Brown, An Illustrated Flora (e).

8. Classification of Flowering Plants: A lecture and laboratory course of fifty hours in which representatives of the main divisions of the flowering plants are studied in illustration of the fundamental principles of classification. Reference is also made to distribution, especially of the local flora, and to the food plants and other economic plants of the group (m).

9. Botanical Collection: Students entering the Second Year in Biology are required to submit a collection of at least 100 species of flowering plants, properly pressed, classified, mounted and labelled. For reference: Gray's New Manual of Botany; Britton and Brown, An Illustrated Flora of the Northern United States and Canada.

10. A course of 100 hours dealing with the lower seed-plants, living and fossil. Text-book: Coulter and Chamberlain, Morphology of Gymnosperms. For reference: Scott, Fossil Botany; Penhallow, North American Gymnosperms; DeBary, Comparative Anatomy of the Phanerogams and the Ferns; Jeffrey, Anatomy of Woody Plants.

11. A course of 100 hours dealing with the higher seed-plants. Text-book: Coulter and Chamberlain, Morphology of Angiosperms. For reference: DeBary, Comparative Anatomy of the Phanerogams and the Ferns; Jeffrey, Anatomy of Woody Plants.

12. Cryptogamic Botany: A lecture and laboratory course of one hundred and twenty-five hours on the system and morphology of the cryptogams. For reference: Coulter, Barnes and Cowles, Text-book of Botany, Vol. I.; Campbell, Mosses and Ferns; Bower, Origin of a Land Flora (m).

13. An elementary course on the morphology and physiology of Bacteria, Yeasts and Molds for Household Science students. For reference: Buchanan, Household Bacteriology; Marshall, Microbiology; Savage, Bacteriological Examination of Food and Water; Conn, Bacteria, Yeasts and Molds in the Home; Coulter, Barnes and Cowles, Text-book of Botany (e).

14. A lecture and laboratory course of one hundred hours on the system and morphology of the algae, fungi, bacteria and slime molds. For reference: Lister, Mycetozoa; Jordan, General Bacteriology; Strasburger, Jost, Schenk and Karsten, Text-book of Botany; DeBary, Comparative Morphology and Biology of the Fungi, Mycetozoa and Bacteria; Duggar, Fungous Diseases of Plants.

15. Classification of cryptogams: A lecture and laboratory course of fifty hours in which representatives of selected groups of cryptogams are studied from the taxonomic standpoint. Reference is also made to distribution, especially of the local flora (e).

16. Botanical Collection: Students entering the Fourth Year in Biology are required to submit a collection of cryptogamic plants from prescribed groups.

17. Plant Physiology: A course of twenty-five lectures and seventy-five hours laboratory work on the physiology of plants. For reference: Jost, Plant Physiology; Ganong, The Living Plant; Pfeffer, Physiology of Plants (e).

18. Oecology and Plant Geography: A course on factors of habitat and the adaptations of plants to them; plant associations and their geographical distribution. For reference: Warming, Ecology of Plants; Schimper, Plant Geography. One hundred hours.

19. An advanced course of one hundred hours on the physiology of plants.

20. A lecture and seminar course on the history of Botany and on the general principles of Biology as related to botanical problems. Text-book: Walter, Genetics. A list of other assigned literature is obtainable on application to the Department. Students proposing to take this course should secure this list at the close of their third year.

21. Students in the Third and Fourth Years of the Special Course in Biology will be expected to show a reading knowledge of French and German.

22. Research studies on selected topics for advanced students. One hundred and fifty hours.

Research: The members of the staff in this department are prepared to suggest problems for investigation in certain branches and to provide materials and laboratory facilities for properly qualified students.

B.—Courses in Faculty of Applied Science.

23. A laboratory course of forty hours serving as an introduction to the use of the microscope, especially in regard to the study of tissues and their products.

24. An elementary lecture and laboratory course of fifty hours on the economic algae and fungi (e).

C.—COURSES IN FACULTY OF FORESTRY.

25. Plant Pathology: A lecture and laboratory course of fifty hours on the lower Cryptogams, and on the diseases of plants, especially of trees.

D.—COURSE IN FACULTY OF VETERINARY SCIENCE.

26. Elementary Botany and Poisonous Plants: A course of fifty hours. Text-book: Bergen and Caldwell, Introduction to Botany. For reference: Pammel, Manual of Poisonous Plants.

27. Special course on poisonous plants for students in Veterinary Science.

ANATOMY.

J. PLAYFAIR MCMURRICH, M.A., PH.D., LL.D.....*Professor.*
J. C. WATT, B.A., M.B.....*Assistant Professor.*
E. R. HOOPER, B.A., M.B.....*Assistant*
W. A. SCOTT, B.A., M.B., F.R.C.S.....*Assistant.*
C. J. COPP, M.D., C.M.....*Assistant.*
G. E. WILSON, M.B., F.R.C.S.....*Assistant.*
N. D'A. FRAWLEY, M.B.....*Assistant.*
G. R. PHILP, M.B.....*Assistant.*
R. E. GABY, B.A., M.D.....*Assistant.*
J. H. MCPHEDRAN, M.B.....*Assistant.*
C. B. PARKER, M.B.....*Assistant.*
W. F. PLEWES, M.B.....*Assistant.*
F. W. WESTON, M.B.....*Assistant.*
J. S. SIMPSON, M.B.....*Assistant.*
H. L. ROWNTREE, M.B.....*Assistant.*
R. HARRIS, M.B.....*Assistant.*
J. H. COTTON, B.A., M.B.....*Assistant.*
G. McI. DALE, B.A., M.B.....*Assistant.*
R. O. FISHER, M.B.....*Assistant.*
W. E. BROWN, M.B.....*Assistant.*
R. J. P. MCCULLOCH, M.B.....*Assistant.*

1. Osteology and Syndesmology: A course of two lectures a week, with demonstrations, throughout the year, together with recitations and practical work throughout the Michaelmas term.

2. Practical Anatomy.—First course: A laboratory course extending throughout the Easter term.

3. Practical Anatomy.—Second course: A laboratory course extending throughout the year.

4. Anatomy of the Nervous System.—A course of two lectures a week, with practical work, throughout the Michaelmas term.

5. Anatomical Research.—Opportunities will be afforded to properly qualified students for carrying on investigation in anatomical problems.

Text-books: Piersol, Human Anatomy; Morris, Human Anatomy; Cunningham, Text-book of Anatomy; Gray, Anatomy; Guide to the Dissection of the Human Body; Sobotta-McMurrich, Atlas and Text-book of Human Anatomy; Spalteholz, Hand Atlas of Human Anatomy; Toldt, Atlas of Human Anatomy; McMurrich, The Development of the Human Body; Herrick, Introduction to Neurology; Villiger, Brain and Spinal Cord; Barker, The Nervous System; Van Gehuchten, Le Système nerveux de l'Homme.

BIOCHEMISTRY.

T. BRAILSFORD ROBERTSON, PH.D., D.Sc. ..... *Professor.*
H. WASTENEYS, PH.D. ..... *Assistant Professor.*
MISS C. C. BENSON, B.A., PH.D., *Associate Professor of Physiological Chemistry in the Faculty of Applied Science.*
MISS R. R. NEFF, B.A., *Instructor in Physiological Chemistry in the Faculty of Household Science.*
MISS C. J. FRASER, B.A. ..... *Assistant.*
F. W. WARD, B.A.Sc. ..... *Laboratory Assistant.*
MISS A. I. MULDREW, B.A. ..... *Fellow.*

The following courses of instruction, each extending throughout the session, are offered:

1. A course of lectures in General Biochemistry; three a week.
2. A course of lectures and conferences in Advanced Biochemistry; two a week.
3. A laboratory course in General Biochemistry; four hours a week.
4. A laboratory course in General Biochemistry; six hours a week.
5. An advanced laboratory course in Biochemistry.
6. A laboratory course in the Chemistry of Food; six hours a week.
7. An advanced laboratory course in Biochemistry in which the chemistry of foods and problems in Nutrition are specially treated; ten hours a week.
8. An elementary course of instruction in Biochemistry for students of the General Course; a laboratory course of four hours a week throughout the session, with lectures in the Easter term.
9. An elementary course on the composition of foods; four hours a week.
10. A course of elementary lectures with laboratory work on Biochemistry and Physiology; two hours a week.

Text-books.

For the course in Advanced Biochemistry: Barger, The Simple Natural Bases; Robertson, The Physical Chemistry of the Proteins; Arrhenius, Quantitative Laws in Biological Chemistry; Effront, Biochemical Catalysts in Life and Industry; Robertson, chapter on "Growth and Development" in Vol. I of Abt's System of Pediatrics; Lusk, Science of Nutrition; Loeb, The Organism as a Whole.

For the laboratory course in General Biochemistry: Robertson, Laboratory Directions in Biochemistry.

Reference: Hammarsten, Text-book of Physiological Chemistry; Taylor, Digestion and Metabolism; Plimmer, The Chemical Constitution of the Proteins; Leathes, The Fats; Armstrong, The Simple Carbohydrates and the Glucosides; Euler, General Chemistry of the Enzymes; Barcroft, The Respiratory Function of the Blood; Loeb, The Dynamics of Living Matter; C. O. Weber, article on "The Colloidal State" in The Chemistry of India-rubber.

Reference, Laboratory Work: Hawk, Practical Physiological Chemistry; Folin, A Laboratory Manual of Biological Chemistry; Plimmer, Practical Organic and Biochemistry.

FOOD CHEMISTRY.

MISS C. C. BENSON, PH.D.....*Associate Professor.*
MISS R. K. NEFF, B.A.....*Instructor.*
MISS C. M. HARWOOD, B.A.....*Assistant.*

1. A course of lectures, one a week, on the Chemistry of Foods.

2. A laboratory course on the Chemistry of Foods. Five hours a week.

3. An advanced laboratory course on the Chemistry of Foods and on problems of Nutrition, with discussion of supplementary reading.

4. Chemistry of Food Constituents. Laboratory work for pass students. One afternoon a week.

5. Composition of Foods. Lectures and laboratory work for pass students. Four hours a week.

6. Elementary Applied Chemistry with special reference to the Chemistry of Foods. Lectures and laboratory work for Household Science students.

Text-books and works of reference include: Winton's Food Analysis; Leach's Food Inspection and Food Analysis; Allyn's Elementary Applied Chemistry; Snell's Household Chemistry; Snyder's Human Foods; Halliburton's Essentials of Chemical Physiology; Canadian and American bulletins on the chemistry of foods.

PHYSIOLOGY.

J. J. R. MACLEOD, M.B., CH.B. (ABERDEEN); PH.D. (CAMB.)
Professor of Physiology.
F. A. HARTMAN, M.A., PH.D.....*Assistant Professor of Physiology.*
A. C. REDFIELD, PH.D.....*Assistant Professor of Physiology.*
MRS. LOIS FRASER, M.A.....*Demonstrator.*
R. S. LANG, B.A.....*Assistant.*
L. G. KILBORN.....*Fellow.*

The following courses of instruction each extending throughout the Session are offered:

1. Systematic lectures. Four a week.
   (*a*) General and neuro-muscular physiology.
   (*b*) Physiology of circulation, respiration, digestion and secretion.
   (*c*) General metabolism, the functions of the endocrine organs and reproduction.
   (*d*) Physiology of the central nervous system and special senses.
2. Advanced lectures. Two a week.
3. General laboratory courses. (Total of 135 hours).
   (*a*) Neuro-muscular Physiology.
   (*b*) Circulation, respiration and digestion.
   (*c*) Nervous system and special senses.
4. Demonstrations (arranged to supplement 1). One hour a week.
5. Advanced laboratory courses.
6. Research in physiology.
7. Journal Club. One hour a week).

Text-books and works of reference: Manual of Physiology, G. N. Stewart; Physiology and Biochemistry in Modern Medicine, J. J. R. Macleod; Starling's or Howell's Physiologies; Bayliss' General Physiology; Luciani's Physiology (trans. by F. Welby); Monographs in Physiology (ed. by E. H. Starling). Other works important for consultation are Marshall's Physiology of Reproduction; Schäfer's Endocrine Organs; Text-book of Physiology (ed. by E. A. Schäfer); Recent and Further Advances in Physiology (ed. by Leonard Hill).

CHEMISTRY.

W. R. LANG, D.Sc. ..... *Professor.*
W. L. MILLER, B.A., PH.D. ..... *Professor of Physical Chemistry.*
F. B. ALLAN, M.A., PH.D. ..... *Associate Professor of Organic Chemistry, Secretary of the Department of Chemistry.*
F. B. KENRICK, M.A., PH.D. ..... *Associate Professor.*
J. L. ROGERS, B.A.Sc. ..... *Assistant Professor of Analytical Chemistry.*
W. S. FUNNELL, M.A. ..... *Lecturer.*
E. I. FULMER, M.A. ..... *Assistant.*
A. L. MARSHALL, B.A. ..... *Assistant.*
J. W. MORGAN, B.A. ..... *Assistant.*
T. C. NEWMAN, B.A. ..... *Assistant.*
M. E. SMITH, B.A. ..... *Assistant.*
L. E. WESTMAN, M.A., A.I.C. ..... *Assistant.*

This subject forms part of the courses of study prescribed for students proceeding to degrees in Arts, Applied Science, Forestry, Medicine, and Veterinary Science.

In the Honour Course "Chemistry and Mineralogy" in the Faculty of Arts, provision is made by suitable options for students who wish to qualify as Specialists in Science under the Department of Education; in the Honour Course "Chemistry" no such provision is made. In both these courses the laboratory work of the fourth year consists of research in one of the branches of chemistry; and arrangements have been made under which this work may be carried out either in the Chemical Laboratory or in the laboratories of Applied Chemistry, Biochemistry, or Pathological Chemistry.

Lectures.

The following courses are provided:

1. Elementary Chemistry: An introductory course in general chemistry with experimental illustrations. Two lectures a week during session.

2. A course of lectures on the influence of chemistry on the progress of civilization. Two lectures a week during session.

3. Elementary Organic Chemistry: A course of experimental lectures on the systematic classification of the fatty hydrocarbons and their derivatives. Lectures explanatory of the benzene theory and of certain more common organic derivatives are included. Two lectures a week during session.

4. Organic Chemistry: The work in Course 3 is reviewed and extended, fuller consideration being given to the isocyclic compounds. Two lectures a week during session.

5. Advanced Organic Chemistry: A course on heterocyclic compounds, synthetic methods and stereochemistry. Two lectures a week during session.

6a. History of Chemistry: A short course of lectures, commencing in January, on the development of chemistry and chemical theory.

6b. Essays on Prescribed Topics.

7. Elementary Physical Chemistry: An experimental course on the elements of chemical mechanics and electrochemistry. Fifty lectures.

8. Elementary Electrochemistry: Twenty-five lectures illustrated by experiments.

9. Physical Chemistry: Elementary applications of the calculus to physico-chemical problems. Fifty lectures.

10. Chemical equilibrium, chemical kinetics, and electrochemistry. Fifty lectures.

11. Advanced Physical Chemistry. The Phase rule, and chemical thermodynamics. Sixty-five lectures.

12. Applied Chemistry.

In addition, special instruction will be given to the students of the departments of Chemistry, Geology and Mineralogy, and Physics, as occasion requires.

Laboratory Work.

13. Elementary quantitative chemistry.
14. Elementary quantitative chemistry (shorter course).
15. Analysis, chemical mechanics and organic preparations. Four hours a week.
16. Quantitative and qualitative analysis.
17. Analysis of minerals and rocks.
18. Analysis, organic preparations and physico-chemical measurements.
19. Practical organic chemistry.
20. Physico-chemical measurements, and electro-chemistry.
21. Research work for advanced students.
24. A short course of physico-chemical measurements, including electrical conductivity, migration, and freezing point of solutions.
25. Electrochemistry, to accompany lecture Course 8.

Laboratory Regulations.

Each student proposing to attend lectures or practical work in the chemical laboratory must apply for a card which will have marked on it the number of his seat in the lecture room, of his working place in the laboratory and of his locker. These cards will be given only to students presenting their registration cards, and no working place in the laboratory will be allotted until a deposit of four dollars (for some classes three dollars) has been made. Each student will be held responsible for the seat, etc., allotted him, and no change may be made without permission. At the close of the Easter term this card must be presented for certificate of attendance.

Each student is provided with a suitable note-book in which to keep an account of the work done by him during the year. These books will be examined from time to time, and marks will be assigned. The student's standing in practical chemistry is based upon these marks, together with those assigned for the practical examinations of the term, and for written examinations on the work.

An account will be kept with each student; all apparatus broken or destroyed and all fines will be charged against his deposit, which must be renewed when exhausted.

The apparatus provided is intended for use in the laboratory only, and may not be removed from the building. At the close of the term's work it must be returned clean and dry.

GEOLOGY AND PALÆONTOLOGY.

A. P. COLEMAN, M.A., PH.D.....*Professor of Geology.*
W. A. PARKS, PH.D.....*Professor of Palaeontology.*
A. MACLEAN, B.A.....*Lecturer.*

1. Elementary Geology and Physiography: A course of twenty-five lectures is given weekly throughout the session. Works of reference: Scott, Introduction to Geology; Davis, Physical Geography.

2. (*a*) A course of fifty lectures and (*b*) fifty hours' practical work, designed to cover the whole field in a general way. Works of reference: As in course No. 1.

3. Dynamic and Structural Geology. A shorter course for students of the pass course. Twenty-five lectures.

4. Palaeontology: (*a*) A course of twenty-five lectures on Invertebrate and Vertebrate Palaeontology; (*b*) a laboratory course of fifty hours.

5. Historical Geology. A course of fifty lectures and fifty hours laboratory work on historical geology and palaeontology with special reference to Canada.

6. Historical and Stratigraphical Geology and Palæontology. A course of fifty lectures is given throughout the session. Works of reference: Scott, Introduction to Geology; Geikie, Text-book of Geology; Pirrson and Schuchert, Text-book of Geology.

7. Illustrative practical course to accompany No. 6. A course of thirty hours in the use of maps and sections, and the study of fossils typical of the different formations.

8. Dynamical and Structural Geology: A course of fifty lectures. Works of reference: Geikie, Geology; Chamberlin and Salisbury, Geology.

9. Invertebrate Palæontology: A course of fifty lectures throughout the session. Works of reference: Eastman's translation of Zittel's Text-book of Palæontology; Nicholson, Manual of Palæontology; Steinmann-Döderlein, Elemente der Palæontologie; Grabau, North American Index Fossils.

10. Invertebrate Palæontology: A course of seventy-five hours' practical work. Works of reference: As in course No. 9; Palæontological publications of the Geological Survey of Canada, and of the different State surveys; Bulletins and Monographs of the Geological Survey of the United States.

11. Drawing and Cartography: A practical course of fifty hours in the Faculty of Applied Science.

12. Archæan Geology: A course of twenty-five hours throughout the session. Works of reference: Van Hise, Precambrian Geology; Geikie, Text-book of Geology; Reports of the Geological Survey of Canada and of the Bureau of Mines of Ontario.

13. Glacial Geology and Physiography: A course of twenty-five lectures throughout the session. Works of reference: Geikie, Great Ice Age; Penck, Morphologie der Erdoberfläche; De Lapparent, Géographie Physique.

14. Geological Surveying and Cartography: A course of field work and practical work in drafting. Three hours per week throughout the year.

15. Economic Geology: A course of fifty lectures throughout the session. Works of reference: Kemp, The Ore Deposits of the United States and Canada; Tarr, Economic Geology of the United States; Ries, Economic Geology of the United States; Beck, The Nature of Ore Deposits; Phillips, Ore Deposits; Reports of the Geological Survey of Canada and of the Bureau of Mines of Ontario.

16. Practical Economic Geology: A course of fifty hours' laboratory work to illustrate course No. 15.

17. Meteorology: A course of twenty-five lectures. Works of reference: Davis, Elementary Meteorology; Hann, Klimatologie.

18. Vertebrate Palæontology: A course of twenty-five lectures. Works of reference: Woodward, Vertebrate Palæontology; Nicholson and Lydekker, Palæontology; Eastman's Zittel's Palæontology.

19. Stratigraphic Palæontology: A course of seventy-five hours lectures and laboratory work. Works of reference: The publications in the Library of the Department, including various monographs on special subjects and the palæontological reports of the different States and societies.

20. Mining Geology: A course of twenty-five lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side. Works of reference: As in course No. 12.

21. Fifty hours laboratory work on the Geology and Palæontology of the Province of Ontario.

MINERALOGY AND PETROGRAPHY.

T. L. WALKER, M.A., PH.D.....*Professor.*
A. L. PARSONS, B.A.....*Assistant Professor.*
J. E. THOMSON, B.A.Sc.....*Lecturer.*

For students in the Faculty of Arts of the University of Toronto the following courses of lectures and demonstrations have been arranged:

1. Elementary Mineralogy: A course of twenty-five lectures once a week throughout the year. Books of reference: Dana, Minerals and how to study them: Text-book of Mineralogy.

2. A short practical course illustrative of the above, involving twenty hours' laboratory work. Books of reference: As for Course 1.

3. Morphological Crystallography: A course of twenty-five lectures once a week throughout the year. Books of reference: Walker, Crystallography; Williams, Crystallography.

4. Blowpipe Analysis and Determinative Mineralogy: A laboratory course of three hours a week throughout the year (two hours a week for pass students). Books of reference: Eakle, Mineral Tables: Brush-Penfield Blowpipe Analysis.

5. Determinative Mineralogy: A laboratory course in continuation of Course 4. Two hours a week. Books of reference: Brush-Penfield, Blowpipe Analysis.

6. Physical Mineralogy: A course of fifty hours' lectures and laboratory work, introducing the student to optical and physical crystallography as a preparation for the study of microscopic petrography (seventy-five hours for pass students). Books of reference: Dana, Text-book of Mineralogy; Walker, Crystallography.

7. Practical Crystallography, including goniometric measurements, crystal drawing, projection and calculation with experiments in physical mineralogy. One day a week during the Michaelmas term.

8. Systematic Mineralogy: A course of fifty hours' lectures and laboratory work, being a continuation of courses 1 and 2. Books of reference: Dana, Text-book of Mineralogy; Eakle, Mineral Tables.

9. General Mineralogy: Twenty-five lectures on special subjects to be selected from year to year. Books of reference: Kobell, Geschicte der Mineralogie; Fouqué et Michel-Lévy, Synthèse des Minéraux et des Roches.

10. General Mineralogy: Practical course of seven hours a week throughout the year.

11. Petrography: One hour a week lectures and practical work throughout the session. Books of reference: Kemp, Handbook of Rocks; Harker. Petrology for students.

12. Petrography: Two hours a week devoted to practical petrography, both macroscopic and microscopic. Books of reference: Luquer, Minerals in Rock Sections; Reinisch, Petrographisches Praktikum.

13. Assaying: Laboratory work in the different branches of the subject, occupying three hours a week throughout the session.

14. Advanced Petrography: Twenty-five lectures on the characteristics of the rock-forming minerals and on general petrography. Book of reference: Iddings, Rock Minerals.

The work in Mineralogy is carried on in the Mineralogical Laboratories in the Chemistry and Mineralogy Building.

HOUSEHOLD SCIENCE.

Members of the Faculty of Household Science.

MISS A. L. LAIRD, M.S. ..... *Associate Professor.*
MISS L. L. OCKLEY, B.A. ..... *Lecturer.*
MISS E. M. HICKMANS, M.Sc. ..... *Lecturer.*
MISS H. HILL, B.S. ..... *Lecturer.*
MISS J. ROWNTREE, B.S. ..... *Lecturer.*
MRS. C. V. SCOTT, B.A. ..... *Instructor*
MISS E. V. MILLAR, B.A. ..... *Instructor.*
MISS M. S. MCDONALD, B.A. ..... *Laboratory Assistant.*

1. History of Home Life: A course of lectures one hour a week throughout the session.

2. Household Management: A course of six hours a week throughout the session. This includes (*a*) a study of metals, woods, textiles, etc., used in the home, and the principles underlying their care, (*b*) the house, (*c*) the home care of the sick.

3. Foods and Food Values: A course of ten hours a week throughout the session—lectures and laboratory work.

4. Economics of the Household: A lecture course of two hours a week throughout the session. It includes the economics of spending, the division of the income, etc.

5. Dietetics: A lecture course of two hours a week throughout the session. Methods of investigating the kind and amount of food required under varying conditions are discussed. Practical application of this knowledge is made in the construction of dietaries for different classes of people.

6. An advanced laboratory course of six hours a week throughout the session. It includes practice in marketing and in preparing and serving meals and special diets. Each student is given the opportunity to investigate special problems bearing on her work.

7. Household Science for General Course students. A course of lectures and laboratory work throughout the session.

8. Household Science for General Course students. A course of lectures and laboratory work throughout the session.

9. A one-year course for the training of candidates for Ordinary Certificates in Household Science. The course is open to teachers who hold professional certificates. For further information see Faculty of Education calendar.

Occasional Work: Under certain conditions, occasional students may be admitted to Courses 7 and 8.

Graduate Work: Opportunities are offered in the laboratories to graduate students who desire to engage in research work.

Laboratory deposit fee: a deposit of three dollars ($3.00) is required of each student taking laboratory courses. This amount, minus the cost of equipment and apparatus destroyed, will be returned at the end of the year.

In the Food laboratories students are required to wear plain white aprons, in Household Management laboratories dark ones may be worn.

Books of reference: Food and Dietetics, Hutchison; Practical Dietetics, Thompson; Feeding the Family, Rose; Food and Feeding, Watson; Care and Feeding of Children, Holt; Science of Nutrition, Lusk; Nutrition and Clinical Dietetics, Carter, Howe and Mason; Selection and Preparation of Foods, Bevier and Van Meter; Chemistry of Food and Nutrition, Sherman; Principles of Human Nutrition, Jordan; Source, Chemistry

and Use of Food Products, Bailey; Food Products, Sherman; Food Industries, Vulté and Vanderbilt; Economics, McKillop and Atkinson; Cost of Living, American Academy of Political and Social Science, How to Keep Household Accounts, Haskins; Household Economics, Campbell; Cost of Living, Cost of Shelter, Richards; Chemistry of Cooking and Cleaning, Richards and Elliott; Household Administration, Ravenhill; The Care of a House, Clark; Laundering, Balderston; The Science of Laundry Work, Rankin; The Art and Practice of Laundry Work, Rankin; Nursing, Its Principles and Practice, Hampton-Robb; Practical Nursing, Maxwell and Pope; Shelter and Clothing, Kinne and Cooley; Textiles, Woolman and McGowan; Textiles, Dooley; Equipment for Teaching Domestic Science, Kinne; Government Bulletins; Library of Home Economics, Vols. I-XII.

RELIGIOUS KNOWLEDGE.

REV. JAMES BALLANTYNE, B.A., D.D.....Knox College.
REV. T. S. BOYLE, M.A., D.D.....Trinity College.
W. T. BROWN, M.A., PH.D.....Victoria College.
REV. F. H. COSGRAVE, B.A., B.D.....Trinity College.
REV. R. DAVIDSON, PH.D.....Knox College.
REV. H. T. F. DUCKWORTH, M.A.....Trinity College.
REV. A. HAIRE-FORSTER, B.A., B.D.....Trinity College.
REV. ALFRED GANDIER, M.A., D.D.....Knox College.
REV. W. T. HALLAM, B.A., B.D.....Wycliffe College.
S. H. HOOKE, M.A., B.D.....Victoria College.
REV. ALBERT EDWARD HURLEY, D.D.....St. Michael's College.
REV. A. J. JOHNSTON, B.A.....Victoria College.
REV. ROBERT LAW, M.A., B.D.....(Ob.)
REV. T. C. S. MACKLEM, M.A., D.D., LL.D.....Trinity College.
REV. J F. MCLAUGHLIN, B.A., B.D.....Victoria College.
REV. F. D. MEADER, B.A.....St. Michael's College.
REV. J. H. MICHAEL, M.A.....Victoria College.
REV. T. R. O'MEARA, B.A., LL.D.....Wycliffe College.
E. T. OWEN, M.A.....Trinity College.
REV. W. A. POTTER, B.A., B.D.....Victoria College.
REV. J. D. ROBERTSON, M.A., D.Sc.....Knox College.
REV. W. H. GRIFFITH THOMAS, M.A., D.D.....Wycliffe College.
REV. F. H. WALLACE, M.A., D.D.....Victoria College.

FIRST YEAR—

1*a*. A first course in the English Bible. One hour.

1*b*. A first course in Natural and Revealed Religion. One hour.

1*c*. A first course in the language of the Greek New Testament. Three hours.

SECOND YEAR—

2*a*. A second course in the English Bible. One hour.

2*b*. A second course in Natural and Revealed Religion. One hour.

2*c*. A second course in the language of the Greek New Testament. Not less than two hours.

2*d*. A course in Church History (Victoria). One hour.

THIRD YEAR—

3*a*. A third course in the English Bible. Two hours.

3*b*. A third course in Natural and Revealed Religion. Two hours.

3*c*. A first course in the Literature and Language of Greek Testament. Two hours.

3*d*. A course in Church History. Two hours.

3*e*. A first course in the History and Philosophy of Religion. Two hours.

FOURTH YEAR—

4*a*. A fourth course in the English Bible. Two hours.

4*b*. A fourth course in Natural and Revealed Religion. Two hours.

4*c*. A second course in the Literature and Language of Greek Testament. Two hours.

4*d*. A course in Church History. Two hours.

4*e*. A second course in the History and Philosophy of Religion. Two hours.

NOTE.—In 1*a*, 2*a*, 3*a* and 4*a* and subject to the same regulations, there may be substituted Oriental Languages 1*a*, 2*a*, 3*a*, and 4*a* respectively.

WORLD HISTORY.

C. T. CURRELLY, M.A.....*Professor of the History of Industrial Art.*

1. A course of lectures primarily for students of the Third and Fourth Years.

MILITARY INSTRUCTION.

COLONEL W. R. LANG, D.SC. (GENERAL STAFF, C.E.F.).....*Director.*

1. The course will cover part of the work necessary for the C.O.T.C. Certificate "A", *i.e.*, for Lieutenants of Infantry. The subjects treated will be considered in such a way as to make them educative as well as instructive. Only those students of the second year who have taken military training in their first year or possess equivalent experience will be admitted to Course I.

2. Course 1 will be continued in the third year. Those who complete it successfully will be recommended to the Department of Militia for Certificate "A".

3. This course will cover the work required for Certificate "B" and will involve the study of the Science of War, Strategy, and some portion of Military History. Those who complete this course successfully and have had defined military experience will be recommended to the Department of Militia for Certificate "B".

TIME-TABLE.

	MONDAY.	TUESDAY.	WEDNESDAY.
8			
9	1 Latin 2 German 3 Ethics 4 English	1 English 2 Latin 3 Rel. Know. 4 Ethics, Physics	1 Latin 2 Rel. Know. 3 Ethics 4 English
10	1 German 2 *French 3 Latin 4 Latin	1 *French 2 German 3 English 4 Gk., Ital., Span.	1 French 2 English 3 Anct. Hist. 4 French
11	1 Mathematics 2 Biol. or Bot. 3 Mod. Hist. 4 Rel. Know.	1 Trig. or R. K. 2 Greek 3 Chem., Geol., H. S. 4 Hist. Phil.	1 Heb., Ital., Span. 2 Chem. or Math. 3 Economics 4 Anct. Hist.
12	1 Science 2 Greek 3 Hist. Phil. 4 Mod. Hist., Biol.	1 Science 2 History 3 Biol., Bioch.	1 Science 2 Phys., Geol., Math. II 3 Mod. Hist. 4 Heb., Chem., Geol., H. S.
1			
2	1 French 2 †Chemistry 3 †Chem., Geol., H. S. 4 Economics	1 Greek 2 Phys. or Geol. 3 Ital., Span. 4 †Astr., Physiol., Bioch.	1 Greek 2 Biol. or Bot. 3 French 4 German
3	2 †Chemistry 3 †Chem., Geol., H. S. 4 †Chem., Geol., H.S.	1 Heb., Ital., Span. 2 Phys. or Geol. 3 Economics 4 †Astr., Physiol., Bioch.	2 Biol. or Bot. 3 German 4 †Chem., Geol., H. S.
4	2 Philosophy 4 †Chem., Geol., H.S.	2 Economics 3 †Phys., Biol., Bioch. 4 †Phys., Biol.	2 Heb., Ital., Span. 3 Gk., Ital., Span. 4 †Chem., H. S.
5	4 Geology	3 †Phys., Biol., Bioch. 4 †Phys., Biol.	

The third and fourth year hours of instruction in the Sciences are subject to change of which due notice will be given to the students concerned.

TIME-TABLE.

	THURSDAY.	FRIDAY.	SATURDAY.
8			
9	1 English 2 Latin, Geol. 3 Hebrew, Physics 4 Rel. Know.	1 Latin 2 Greek 3 Rel. Know. 4 English	1 Greek 2 Rel. Know. 3 English 4 French
10	1 Greek 2 *French 3 English 4 Anct. History	1 German 2 Latin 3 French 4 Ethics	1 Latin 2 English 3 Greek 4 German
11	1 Heb., Ital., Span. 2 Chem. or Math. 3 Phys., Bioch. 4 Gk., Ital., Span.	1 Mathematics 2 French 3 Anct. Hist. 4 Phys., Biol.	1 *French 2 Heb., Ital., Span. 3 German 4 Heb., Chem., Geol., H. S.
12	1 Anc. History 2 Biol. or Bot. 3 Hist. Phil., Biol., 4 Mod. Hist.	2 Phys., Math. II 3 Chem., Geol., H. S. 4 Hist. Phil.	1 German 3 Hebrew 4 Ital., Span.
1			
2	1 German 2 Economics 3 Latin 4 Latin	1 Heb., Ital., Span. 2 German 3 Ital., Span. 4 Economics	
3	2 Heb., Ital., Span. 3 †Chem., Geol., H. S. 4 †Astr., Physiol., Bioch.	2 Philosophy 3 †Phys., Biol., Bioch. 4 †Phys., Biol.	
4	2 History 3 †Chem., Geol., H. S. 4 †Astr., Physiol., Bioch.	3 †Phys., Biol., Bioch. 4 †Phys., Biol.	
5			

*These are the lectures which first year honour science students must attend.
†These are the lectures which second year honour science students must attend.

PRESCRIPTION FOR COURSES.

The courses leading to the degree of Bachelor of Arts are

(*a*) The Pass Course.

(*b*) The General Course—Household Science.

(*c*) The following Honour Courses :—

Classics.	Physics.
Greek and Hebrew.	Biology.
Oriental Languages.	Biological and Physical Sciences.
Modern Languages.	Physiological and Biochemical Sciences.
English and History.	Chemistry.
Modern History.	Chemistry and Mineralogy.
Political Science.	Geology and Mineralogy.
Commerce and Finance.	Household Science.
Philosophy.	Science for Teachers.
Mathematics and Physics.	

(*d*) The Arts and Forestry.

The requirements for each of these courses are detailed in the following schedules, where the numerals refer to the corresponding numbers of the courses on the pages indicated.

NEW PASS COURSE.

First Year.

1919-1920.

1. English 1a, 1b, pp. 96, 97	2 hours
2. Latin 1a, p. 90	4 "
3. One of Greek 1a, p. 88	4 "
Hebrew 1b, p. 93	4 "
German 1a, p. 100	4 "
French 1a, p. 102	4 "
Italian 1a, 1b, p. 104, *or* Spanish 1a, 1b, p. 105	3 "
4. One of a second language from 3	4 "
Zoology 1, p. 129	3 "
5. Mathematics 1, 4, pp. 119, 120	2 "
6. One of Greek and Roman History 1, p. 92	1 "
Mathematics 6, p. 120	1 "
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1 "

A student of Chinese birth and education is permitted to substitute Chinese for Latin in the First and Second Years. For such students a special curriculum in Chinese will be prepared.

Second Year.

The new Pass Course is framed in such a way as to allow a student three years' continuous instruction in certain subjects which are begun in the Second Year, namely Political Economy, Philosophy, Mathematics I, Mathematics II, Physics, Zoology, Botany, Chemistry, Geology and Mineralogy.

In these subjects, the choice made in the Second Year cannot be varied except on joint action of the College and University authorities.

(Five subjects).

1. One of	Greek 2a, p. 88	3 hours
	Latin 2a, p. 90	3 "
	Hebrew 2b, p. 93	3 "
	Mathematics I	3 "
	Mathematics II	3 "
	Physics 9, 10, p. 125	4 "
	Zoology 2, p. 130	4 "
	Botany 2a, 2b, p. 133	4 "
	Chemistry 1, 14, pp. 140, 141	4 "
	Geology 2a, 2b, p. 142	4 "
2. One of	Greek 2a, p. 88	3 "
	Latin 2a, p. 90	3 "
	Hebrew 2b, p. 93	3 "
	German 2a, p. 100	3 "
	French 2a, p. 102	3 "
	Italian 2a, 2b, p. 104, *or* Spanish 2a, 2b, p. 105	3 "
3. Three of	an additional language from 2	3 "
	English 2a, 2b, p. 97	2 "
	History 2a, 2f, p. 106	2 "
	Political Economy 6, p. 108	2 "
	Philosophy 3, p. 116, *or* 8, p. 117	2 "
	Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	2 "
	Military Instruction 1, p. 147	
	Not more than two of Mathematics I	3 "
	Mathematics 2	3 "
	Physics 9, 10, p. 125	4 "
	Zoology 2, p. 130	4 "
	Botany 2a, 2b, p. 133	4 "
	Chemistry 1, 14, pp. 140, 141	4 "
	Geology 2a, 2b, p. 142	4 "

Notes—(*a*) A student who has no credit in Science in the First Year must take the Science of the First Year or one of the Sciences of the Second Year.

(*b*) A student who selects a Science of the Second Year whether under (1) or (3) must continue the course in the Third and Fourth Years unless permission to change the subject selected is granted by the Council on report of the College in which the student is enrolled.

(*c*) A student may take three foreign languages or three sciences only by special permission of the Council on the recommendation of his College.

(*d*) A student who intends to select Household Science in the Third and Fourth Years is required to take Chemistry in the Second Year.

Third and Fourth Years.

The plan upon which the work of the Third and Fourth Years is arranged is indicated so that students of the Second Year may make their choice of subjects of that year in such a way as to be able to enter the particular group desired in the higher years with the least possible adjustment.

The subjects of the Third and Fourth Years are arranged as follows:

(*a*)	Greek, Latin, Hebrew	3 hours
(*b*)	German, French, Italian, *or* Spanish	3 "
(*c*)	English	3 "
(*d*)	Religious Knowledge	3 "
(*e*)	Ancient History or Modern History, Ethics, History of Philosophy, Political Economy	3 "
(*f*)	Mathematics (3 hours), Physics, Zoology, Botany, Chemistry, Geology and Mineralogy	4 "
(*g*)	Household Science	4 "

Notes—(*a*) Five subjects are to be chosen, not more than two from any one group.

(*b*) Not more than three subjects may be chosen from groups (*a*), (*b*), (*c*) and Religious Knowledge 3a, 3c, 4a, 4c, of (*d*).

Based upon the arrangement of subjects the following groups are announced in this calendar as affording opportunities for wide choice of subjects and for the aptitudes of individual students.

A student in the Pass Course who is entitled to register in the Third Year is required to submit to the authorities of his College, his selection of subjects for each of the Third and Fourth Years. Registration cannot be completed until the College has formally approved of his selection.

GROUP I.

1. Greek *or* Latin *or* Hebrew
2. A second language from 1
3. English *or* Religious Knowledge
4. Ancient History *or* Modern History *or* Political Economy *or* Ethics *or* History of Philosophy *or* Physics *or* Zoology *or* Botany *or* Chemistry *or* Geology and Mineralogy *or* Religious Knowledge courses *b*, *d*, *e* (if not already chosen)
5. A second subject from 4

GROUP II.

1. Greek *or* Latin
2. Ancient History
3. Political Economy or Ethics *or* History of Philosophy *or* Religious Knowledge
4. English *or* a second foreign language *or* Religious Knowledge
5. An additional subject from 3 *or* 4 *or* Physics *or* Zoology *or* Botany *or* Chemistry *or* Geology and Mineralogy

GROUP III.

1. Hebrew
2. Ethics
3. Ancient History *or* Modern History *or* Political Economy *or* History of Philosophy *or* Religious Knowledge
4. English *or* a second foreign language *or* Religious Knowledge
5. An additional subject from 3 *or* 4 *or* Physics *or* Zoology *or* Botany *or* Chemistry *or* Geology and Mineralogy

GROUP IV.

1. Latin
2. French
3. English
4. Modern History *or* Ethics *or* History of Philosophy *or* Religious Knowledge
5. A second subject from 4

GROUP V.

1. French *or* German *or* Italian *or* Spanish
2. A second language from 1
3. English *or* Modern History *or* History of Philosophy
4. A second subject from 3
5. Political Economy *or* Physics *or* Zoology *or* Botany *or* Chemistry *or* Geology and Mineralogy *or* Religious Knowledge

GROUP VI.

1. English
2. Latin *or* French *or* History of Philosophy
3. A second subject from 2
4. A third subject from 2 *or* Modern History
5. Religious Knowledge *or* any subject possible under the timetable and consistent with the arrangement of subjects as found in the paragraph under the heading Third and Fourth Years.

GROUP VII.

1. Modern History
2. English
3. Latin *or* French
4. Zoology *or* Botany *or* Geology and Mineralogy
5. History of Philosophy *or* Political Economy *or* Religious Knowledge

GROUP VIII.

1. Modern History
2. Ethics *or* History of Philosophy
3. Greek *or* Latin *or* Hebrew
4. French *or* German
5. English *or* Religious Knowledge

GROUP IX.

1. Mathematics I
2. Mathematics II
3. German *or* French *or* Italian *or* Spanish
4. Ethics *or* History of Philosophy *or* Political Economy
5. English *or* Modern History *or* Religious Knowledge

GROUP X.

1. Physics *or* Zoology *or* Botany *or* Chemistry *or* Geology and Mineralogy.
2. A second Science from 1 *or* Mathematics I *or* Mathematics II
3. English
4. French
5. Religious Knowledge *or* any subject possible under the timetable and consistent with the arrangement of subjects as found in the paragraph under the heading Third and Fourth Years.

GROUP XI.

1. Household Science
2. Chemistry
3. English *or* Modern History
4. Ethics *or* Economics
5. Religious Knowledge *or* any subject possible under the timetable and consistent with the arrangement of subjects as found in the paragraph under the heading Third and Fourth Years

PASS COURSE.

Third and Fourth Years.

A student in the Pass Course who is entitled to register in the Third Year is required to submit to the authorities of his College, his selection of subjects for each of the Third and Fourth Years. Registration cannot be completed until the College has formally approved of his selection.

A subject common to the Third and Fourth Years and chosen for the Third Year must be continued in the Fourth Year, unless permission to change the subjects selected is granted by the Council on report of the College in which the student is enrolled.

In the Third Year, the subjects of Physics, Biology, Geology and Chemistry are open only to those students who have taken the corresponding courses in the Second Year.

In the Third Year, owing to the nature of the time-table, a student may take one and not more than one subject from each of the following groups: (*a*) Greek, Italian, Spanish; (*b*) Physics, Biology, Chemistry and Biochemistry; (*c*) Chemistry, Geology, Household Science; (*d*) Hebrew, Physics; (*e*) History of Philosophy, Biology.

A student who selects Household Science as a subject of the Third and Fourth Years is required in the Second Year to take Chemistry and in the Third Year to take Chemistry and Biochemistry along with Household Science.

In the Fourth Year, the subjects of Physics, Biology, Biochemistry, Chemistry, Geology and Household Science are open only to those students who have taken the corresponding courses in the Third Year.

In the Fourth Year, owing to the nature of the time-table, a student may take one and not more than one subject from each of the following groups: (*a*) Greek, Italian, Spanish; (*b*) Astronomy, Physiology, Biochemistry; (*c*) Hebrew, Chemistry, Geology, Household Science; (*d*) Ethics, Physics; (*e*) Physics, Biology.

Third Year.

Six subjects *or* five subjects for those taking two Sciences.

1. English 3a, 3b, p. 97	3	hours
2. One and not more than *three* of:		
Greek and Roman History 3a, p. 92	3	"
History 3a, 3d, p. 106	3	"
Political Economy 16, p. 110	3	"
†Philosophy 11, p. 117	3	"
†Philosophy 13, p. 117	3	"
3. Not more than two of:		
(*a*) Biology 3, p. 130 *or* Botany 7, p. 134	6	"
Physics 3b, 5, 6 part, p. 124 *or*	6	"
Chemistry 3, p. 140 and Food Chemistry 4, p. 138	6	"
(*b*) Chemistry 3, 15, pp. 140, 141 *or*	6	"
Geology 5, 18, pp. 142, 143 and Mineralogy 6, p. 144 *or*	6	"
Household Science 7, p. 145	6	"
4. Not more than two of:		
Greek 3a, p. 88	2	"
Latin 3a, p. 90	2	"
Hebrew 1b, p. 93, *or* 3b, p. 94	2	"
German 3a, p. 100	2	"
French 3a, p. 102	2	"
Italian 1a, 1b, p. 104 *or*	3	"
Spanish 3a, 3b, p. 105	2	"
5. One of Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
Second subject from (2)	2	"
Addition language from (4)	2	"

† *Course 19 may be substituted for Course 11, and Course 19 for Course 11, by Students registered in St. Michael's College.*

A student who selects Household Science as a subject of the Third and Fourth Years is required to take Chemistry and Biochemistry.

Fourth Year.

Six subjects *or* five subjects for those taking two Sciences.

1. English 4a, 4b, p. 98	3	hours
2. One and not more than three of:		
Greek and Roman History 4a, p. 92	3	"
History 4a, 4c, p. 106	3	"
Political Economy 31, p. 112	3	"
†Philosophy 23, p. 118	3	"
†Philosophy 26, p. 118	3	"
3. Not more than two of:		
Astronomy 1, 2, pp. 122, 123 *or*	4	"
Food Chemistry 5, p. 138	4	"
(*a*) Zoology 4, p. 130, *or* Botany 12 part, p. 134 *or*	6	"
Physics 4, 6 part, 13 part, pp. 124, 125	6	"
(*b*) Geology 10, 12 part, 17, pp. 142, 143, and Mineralogy 8 part, p. 144 *or*	6	"
Chemistry 7, 8, 25, pp. 140, 141 *or*	6	"
Household Science 8, p. 145	6	"
4. Not more than two of:		
Greek 4a, p. 88	2	"
Latin 4a, p. 91	2	"
Hebrew 2b, p. 93, *or* 4b, p. 95	2	"
German 4a, p. 101	2	"
French 4a, p. 102,	2	"
Italian 2a, 2b, *or* 4a, 4b, pp. 104, 105	2	"
Spanish 2a, 2b, p. 105	2	"
5. One of Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2	"
Second subject from (2)	2	"
Additional language from (4)	2	"

† *Course 31 may be substituted for Course 23, and Course 32 for Course 26, by Students registered in St. Michael's College.*

HOUSEHOLD SCIENCE.

GENERAL COURSE.

This course will be discontinued. Students who have completed the First Year will transfer to the new Honour Course in Household Science.

Third Year

English 3a, 3b, p. 97	3	hours
Two of History 3a, 3d, p. 106	3	"
Political Economy 16, p. 110	3	"
Philosophy 10, p. 117	3	"
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
Biochemistry 1, 3, p. 137	6	"
Household Science 3, p. 145	10	"
Hygiene and Sanitation	1	"

The standard for the Third Year of this Course is forty per cent. on each subject, with an average of fifty per cent.

Fourth Year

English 4a, 4b, p. 97	3 hours
Two of History 4a, 4c, p. 106	3 "
Political Economy 31, p. 112	3 "
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, or 4e, p. 147	2 "
Food Chemistry 1, 2, p. 138	6 "
Household Science 4, 5, 6, p. 145	10 "

The standard for the Fourth Year of this Course is forty per cent. on each subject, with an average of fifty per cent.

A candidate who desires to secure the academic qualifications for Specialists' certificate in Household Science from the Ontario Department of Education is required:

1. To select the subjects of the course from those printed in Roman type in the preceding schedule.

2. To pass the examinations on the course of 100 hours in Sewing which have been agreed upon by the Faculty of Education and the Department of Education of Ontario.

5. To obtain a minimum of forty per cent. in each of the prescribed subjects.

4. To obtain an average of fifty per cent. in the Science subjects of the Second and Third Years, and at least sixty-six per cent. in the Fourth Year.

CLASSICS.

Entrance Conditions.

A student who proposes to enter the Honour Course in Classics is required to obtain at Honour Matriculation or at an equivalent examination, at least 50% in Greek and Latin, at least 40% in Mathematics (Algebra and Geometry) as well as in at least one of German, French, Physics, Biology, preferably German or French.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

First Year.

English 1a, 1b, pp. 96, 97	2 hours
One of German 1a, p. 100	4 "
French 1a, p. 102	4 "
Zoology 1, p. 129	3 "
And one of Mathematics 6, p. 120	1 "
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1 "
*Greek 1c, p. 89	5 "
*Latin 1b, p. 91	4½ "
*Greek and Roman History 1, p. 92	1 "

**Honours.*

Second Year.

One of	English 2a, 2b, p. 97	2 hours
	German 2a, p. 102	4 "
	French 2a, p. 102	4 "
One of	English 2a, 2b, p. 97 (if not already chosen)	2 "
	History 2a, 2d, p. 106	2 "
	Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1 "
	Military Instruction 1, p. 147	

*Greek 2c, p. 89
*Latin 2b, p. 91
*Greek and Roman History 2a, 2b, p. 92

Third Year.

One of	Greek 3h, p. 89, and Latin 3d, p. 91	2 hours
	Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2 "

*Greek 3c, pp. 87, 89
*Latin 3b, p. 91
*Greek and Roman History 3b, 3c, p. 92

Fourth Year.

One of	Greek 4h, p. 90, and Latin 4d, p. 91	2 hours
	Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2 "

*Greek 4c, pp. 89, 90
*Latin 4b, p. 92
*Greek and Roman History 4b, 4c, 4d, pp. 92, 93

Special excellence in any one of the three departments of literature and language, philosophy, or history, will be considered in awarding standing in the Fourth Year; but candidates who wish to qualify as classical specialists under the regulations of the Education Department, must give special attention to the first of the three.

GREEK AND HEBREW.

Entrance Conditions.

A student who proposes to enter the Honour Course in Greek and Hebrew is required to obtain at Honour Matriculation or at an equivalent examination at least 50% in Greek, at least 40% in Latin, Mathematics (Algebra and Geometry) as well as in at least one of English, German, French.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

**Honours.*

First Year.

English 1a, 1b, pp. 96, 97	2 hours
One of Mathematics 6, p. 120	1 "
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1 "
*Greek 1e, p. 89	5 "
*Greek and Roman History 1, p. 92	1 "
*Oriental Languages 1b, p. 93	4½ "

Second Year.

One of English 2a, 2b, p. 97	2 hours
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1 "
Military Instruction 1, p. 147	
One of Latin 2a, p. 90	4 "
German 2a, p. 100	4 "
French 2a, p. 102	4 "
*Greek 2e, 2f, p. 88	3½ "
*Greek and Roman History, 2a, p. 92	½ "
*Oriental Languages 2c, 2d, 2g, pp. 93, 94	6 "

Third Year.

Greek and Roman History 3a, p. 92	3 hours
One of English 3a, 3b, p. 97	3 "
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2 "
*Greek 3f, 3g, p. 89	5 "
*Oriental Languages 3b, 3d, 3g, p. 94	5 "

Fourth Year.

Greek and Roman History 4a, p. 92	3 hours
One of English 4a, 4b, p. 97	3 "
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2 "
*Greek 4f, 4g, p. 90	5 "
*Oriental Languages 4b, 4d, 4g, p. 95	4 "

ORIENTAL LANGUAGES.

Entrance Conditions.

A student who proposes to enter the Honour Course in Oriental Languages at the beginning of the Second Year is required to obtain at the examination of the First Year, at least Second Class Standing in the General Course with not less than 66 per cent. in Hebrew. It is recommended that the optional language should be either Greek or German.

It is possible however to transfer from any other Special Course at the beginning of the Second Year, provided the candidate has obtained not less than 66 per cent. in Hebrew.

**Honours.*

First Year.

English 1a, 1b, p. 97	2 hours
Latin 1a, p. 90	4 "
One of Greek 1a, p. 88	4 "
German 1a, p. 100	4 "
French 1a, p. 102	4 "
Mathematics 1, 4, pp. 119, 120	2 "
One of Mathematics 6, p. 120	1 "
Greek and Roman History 1, p. 92	1 "
†Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1 "
Hebrew 1b, p. 93	4½ "

† *Students in this Course, who have not taken Greek, are advised to take Religious Knowledge 1c, and the similar Courses in the subsequent years.*

Second Year.

English 2a, 2b, p. 97	2 hours
One of Greek 2a, p. 88	4 "
Latin 2a, p. 90	4 "
German 2a, p. 100	4 "
French 2a, p. 102	4 "
One of History 2a, p. 106	1 "
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1 "
Military Instruction 1, p. 147	
*Oriental Languages 2c, 2d, 2e, 2f, 2g, pp. 93, 94	9 "

Third Year.

Two of English 3a, 3b, p. 97	3 hours
Greek and Roman History 3a, p. 92	3 "
History, 3a, 3d, p. 106	3 "
Philosophy 11, p. 117	3 "
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2 "
One of Greek 3a, p. 88	2 "
Latin 3a, p. 90	2 "
German 3a, p. 100	2 "
French 3a, p. 102	2 "
*Oriental Languages 3c, 3d, 3e, 3f, 3g, p. 94	9 "
*Oriental Languages, two of 3h, 3i, 3j, p. 94	

**Honours.*

Fourth Year.

Two of English 4a, 4b, p. 98	3	hours
Greek and Roman History 4a, p. 92	3	"
History 4a, 4c, p. 106	3	"
Philosophy 23, p. 118	3	"
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2	"
One of Greek 4a, p. 88	2	"
Latin 4a, p. 91	2	"
German 4a, p. 101	2	"
French 4a, p. 102	2	"
*Oriental Languages 4c, 4d, 4e, 4f, 4g, p. 95	11	"

†*Oriental Languages, two of 4h, 4i, 4j, p. 95

† Students must continue the courses selected in the Third Year

Every candidate in this course shall, during the Fourth Year, present a dissertation on some subject connected with Oriental Languages or Literature, such subject to be previously approved by his instructors in the department. The essay will, on or before the 1st of April in each year, be laid before the instructors in Oriental Languages in University College, Victoria College and Trinity College, who will examine it and assign to it marks according to their judgment of its merit. Such marks will be reported to the Registrar and be taken into account by the examiners in determining the standing of the candidate at the examination of the Fourth Year.

ORIENTAL LANGUAGES.

Greek Option.

A student who proposes to enter the Honour Course in Oriental Languages with Greek Option, at the beginning of the Second Year, is required to obtain at the examination of the First Year, at least Second Class standing in the General Course with not less than 66% in Greek and Hebrew.

First Year.

English 1a, 1b, pp. 96, 97	2	hours
Latin 1a, p. 90	4	"
Mathematics 1, 4, pp. 119, 120	2	"
One of Mathematics 6, p. 120	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
Greek and Roman History 1, p. 92	1	"
Greek 1a, p. 88	4	"
Oriental Languages 1b, p. 93	4	"

**Honours.*

Second Year.

English 2a, 2b, p. 97	2	hours
Latin 2a, p. 90	4	"
One of History 2a, p. 106	1	"
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1	"
Military Instruction 1, p. 147		
Greek 2a, 2f, pp. 88, 89	5	"
*Oriental Languages 2c, 2d, 2g, pp. 93, 94	6	"

Not less than 66% must be obtained in Greek.

Third Year.

Greek and Roman History 3a, p. 92	3	hours
One of English 3a, 3b, p. 97	3	"
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
*Greek 3f, 3g, p. 89	5	"
*Oriental Languages 3b, 3d, 3g, p. 94	5	"

Fourth Year.

Greek and Roman History 4a, p. 92	3	hours
One of English 4a, 4b, p. 98	3	"
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2	"
*Greek 4f, 4g, p. 90	5	"
*Oriental Languages 4b, 4d, 4g, p. 95	5	"

MODERN LANGUAGES.

Entrance Conditions.

A student who proposes to enter the Honour Course in Modern Languages is required to obtain at Honour Matriculation or at an equivalent examination at least 50% in French and in English or German or History, and at least 40% in Latin and Mathematics (Algebra and Geometry).

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

In determining the standing of candidates in English, French, German, Italian and Spanish, examiners will take into account the report of the instructors in the University and Colleges in these subjects.

**Honours.*

First Year.

History 1, p. 106	1	hour
One of Mathematics 6, p. 112	1	"
Zoology 1, p. 129	3	"
Religious Knowledge 1a *or* 1b *or* 1c, p. 146	1	"
Three of *English 1a, 1c, p. 97	4	"
*German 1c, 1d, 1e, p. 100	4	"
*French, 1b, 1c, p. 103	4	"
*Italian 1a, 1b, p. 104	4	"
*Spanish 1a, 1b, p. 105	4	"

Note: Not more than one new language may be begun in this First Year.

Second Year.

One of History 2a, 2e, p. 106	1	hour
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1	"
Military Instruction 1, p. 147		
Three of *English 2a, 2c, pp. 97, 98	4	"
*German 2c, 2d, 2e, p. 100	3	"
*French 2c, 2d, 2e, p. 103	3	"
*Italian 2a, 2b, p. 104	3	"
*Spanish 2a, 2b, p. 105	3	"
*Phonetics 1, p. 105	1	"

Third Year.

One of History 3a, 3e, p. 106	3	hours
Philosophy 13, p. 117	3	"
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
World History 1, p. 147	2	"
Two of *English 3a, 3b, 3c, p. 98	4	"
*German 3b, 3c, 3d, p. 100	4	"
*French 3b, 3c, 3d, 3e, p. 103	4	"
*Italian 3a, 3b, 3c, 3d, pp. 104, 105	4	"
*Spanish 3a, 3b, 3c, p. 105	4	"
A third Language of		
*English 3a, 3b, p. 98	2	"
*German 3b, p. 100	2	"
*French 3b, p. 103	2	"
*Italian 3a, 3b, p. 104	2	"
*Spanish 3a, p. 105	2	"

**Honours.*

Fourth Year.

One of History 4a, p. 106	3	hours
Philosophy 26, p. 119	3	"
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2	"
World History 1 *or* 2, p. 147	2	"
Two of *English 4a, 4c and either 4b, *or* 4e, pp. 98, 99	4	"
*German 4b, 4c, 4d, 4e, p. 101	4	"
*French 4b, 4c, 4d, 4e, p. 104	4	"
*Italian 4a, 4b, 4c, 4d, p. 105	4	"
*Spanish 4a, 4b, 4c, p. 105	4	"
A third Language of		
*English 4a, 4b, p. 98	2	"
*German 4c, p. 101	2	"
*French 4b, p. 104	2	"
*Italian 4a, 4b, 105	2	"
*Spanish 4a, p. 105	2	"

A candidate is required to continue in the Fourth Year the languages chosen in the Third Year.

ENGLISH AND HISTORY.

Classical Option.

Entrance Conditions.

A student who proposes to enter the Honour Course in English and History (Class.) is required to obtain at Honour Matriculation or at an equivalent examination at least 50% in Greek, Latin and English, at least 40% in Mathematics (Algebra and Geometry), with a recommendation that German or French be taken in addition.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year Vide Secs. 58-62, pp. 38, 39.

First Year.

One of German 1a, p. 100	4	hours
French 1a, p. 102	4	"
One of Mathematics 6, p. 120	1	"
Zoology 1, p. 129	3	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
*Greek 1d, p. 89	4½	"
*Latin 1c, p. 91	4½	"
*Greek and Roman History 1, p. 92	1	"
*English 1a, 1c, p. 97	2	"

**Honours.*

Second Year.

One of	Political Economy 5, p. 108	1 hour
	Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1 "
	Military Instruction 1, p. 147	
*Greek 2d, p. 89		3 hours
*Latin 2c, p. 91		5 "
*English 2a, 2c, pp. 97, 98		4 "
*History 2a, 2b, 5, p. 106		2 "

Third Year.

One of	Philosophy 13, p. 117	3 hours
	Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2 "
*Greek 3d, p. 89		2 "
*English 3a, 3b, 3d, p. 98		4 "
*History 3a, 3b, 5, 6, p. 106		3 "
One of	*English 3c, p. 98	2 "
	*Greek 3e, p. 89 and History 9, p. 107	2 "
	*Latin 3c, p. 91 and History 9, p. 107	2 "

Fourth Year.

One of	Philosophy 26, p. 119	3 hours
	Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2 "
*Greek 4d, p. 90		1 "
*English 4a, 4b, 4d, 4e, pp. 98, 99		6 "
*History 4a, 4b, 5, 6, p. 106		3 "
One of	*English 4c, p. 99	2 "
	*Greek 4e, p. 90 and History 9, p. 107	2 "
	*Latin 4c, p. 92 and History 9, p. 107	2 "

ENGLISH AND HISTORY.

Modern Option.

Entrance Conditions.

A student who proposes to enter the Honour Course in English and History (Mods.) is required to obtain at Honour Matriculation or at an equivalent examination at least 50% in Latin, French, and in English *or* German *or* History, and at least 40% in Mathematics (Algebra and Geometry).

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

**Honours.*

First Year.

One of Mathematics 6, p. 120	2	hours
Zoology 1, p. 129	3	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
*Latin 1b, p. 91	4	"
*Greek and Roman History 1, p. 92	1	"
*English 1a, 1c, p. 97	4	"
One of *German 1c, 1d, p. 100	4	"
*French 1b, p. 103	4	"

Second Year.

One of Political Economy 5, p. 108	1	hour
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1	"
Military Instruction 1, p. 147		
*English 2a, 2c, pp. 97, 98	4	"
*French 2c, 2e, p. 103	3	"
*History 2a, 2b, 5, 6, p. 106	2	"
One of *German 2c, 2d, 2e, p. 100	3	"
*Italian 2a, 2b, p. 104	3	"
*Spanish 2a, 2b, p. 105	3	"

Third Year.

One of Philosophy 13, p. 117	3	hours
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
*English 3a, 3b, 3c, 3d, p. 98	6	"
*History 3a, 3b, 5, 6, p. 106	3	"
One of *German 3b, p. 100	2	"
*French 3b, p. 103	2	"
*Italian 3a, 3b, p. 104.		
*Spanish, 3a, p. 105.		

Fourth Year.

One of Philosophy 26, p. 119	3	hours
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2	"
*English 4a, 4b, 4c, 4d, 4e, pp. 98, 99	8	"
*History 4a, 4b, 5, 6, p. 106	3	"

**Honours.*

MODERN HISTORY.

Entrance Conditions.

A student who proposes to enter the Honour Course in Modern History is required to obtain at Honour Matriculation or at an equivalent examination at least 50% in English and History, at least 40% in Mathematics (Algebra and Geometry) and *either* 50% in Latin and 40% in one of Greek, German, French *or* 50% in one of Greek, German, French and 40% in Latin.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

First Year.

One of Greek 1a, p. 88	4 hours
German 1a, p. 100	4 "
French 1a, p. 102	4 "
One of Mathematics 6, p. 120	1 "
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1 "
One of *Greek 1c, p. 89	3 "
*Latin 1b, p. 91	4½ "
*German 1c, 1d, p. 100	3 "
*French 1b, p. 103	3 "
*Greek and Roman History 1, p. 92	1 "
*English 1a, 1b, p. 96	2 "
*History 1, 5, p. 106	2 "

Honour standing in Greek or Latin or German or French will relieve a candidate of the corresponding language of the General Course subjects.

Second Year.

One of History 5, p. 106	1 hour
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1 "
One of *Greek 2c, p. 89	3 hours
*Latin 2c, p. 91	5 "
*German 2c, 2d, p. 100	3 "
*French 2c, 2e, p. 103	3 "
*English 2a, 2b, p. 97	2 "
*History 2a, 2b, 2c, 5, 6, p. 106	4 "
*Political Economy 1a, 1b, 5, pp. 107, 108	2 "

The honour language of the First Year must be continued in the Second Year.

**Honours.*

Third Year.

One of History 5, p. 106	2	hours
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
*English 3a, 3b, 3d, p. 97	4	"
*History 3a, 3b, 3c, 5, 6, 7, *or* 8, 9, pp. 106, 107	6	"
*Political Economy 1b, 7, 8, pp. 107-109	3	"

Fourth Year.

One of History 5, p. 106	2	hours
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2	"
*English 4a, 4b, 4d, pp. 97, 99	5	"
*History 4a, 4b, 4c, 5, 6, 7, *or* 8, 9, pp. 106, 107	6	"
*Political Economy 1b, 28, 29, pp. 107, 112	2	"

POLITICAL SCIENCE.

Entrance Conditions.

A student who proposes to enter the Honour Course in Political Science is required to obtain at Honour Matriculation or at an equivalent examination at least 50% in English and History, at least 40% in Mathematics (Algebra and Geometry) and *either* 50% in Latin and 40% in one of Greek, German, French *or* 50% in one of Greek, German, French and 40% in Latin.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

A candidate who is awarded Second Class standing, i.e., an average of sixty per cent. in the General Course may in the Second Year proceed in the Special Course in Political Science.

First Year.

COURSE A.

1. English 1a, 1b, pp. 96, 97	2	hours
2. Latin 1a, p. 90	4	"
3. One of Greek 1a, p. 88	4	"
Hebrew 1b, p. 93	4	"
German 1a, p. 100	4	"
French 1a, p. 102	4	"
4. One of a second language from 3	4	"
Zoology 1, p. 129	3	"
5. Mathematics 1, 4, pp. 119, 120	2	"
6. One of Greek and Roman History 1, p. 92	1	"
Mathematics 6, p. 120	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"

*Honours.

COURSE B.

One of Greek 1a, p. 88	4	hours
German 1a, p. 100	4	"
French 1a, p. 102	4	"
One of Greek and Roman History 1, p. 92	1	"
Mathematics 6, p. 120	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
One of *Greek 1c, p. 89	4	"
*Latin 1b, p. 91	4	"
*German 1c, 1d, p. 100	3	"
*French 1*b*, p. 103	3	"
*English 1a, 1b, p. 96	2	"
*History 1, 5, p. 106	1	"
*Political Economy 2, p. 107	1	"

Honour standing in Greek or Latin or German or French will relieve a candidate of the corresponding language of the General Course subjects.

Second Year.

English 2a, 2c(ii), pp. 97, 98	2	hours
One of Political Economy Essays	1	"
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1	"
Military Instruction 1, p. 147		
*Greek and Roman History 2b, p. 92		
*History 2a, 2c, 5, 6, p. 106		
*Political Economy 1a, 1b, 3, 4, pp. 107, 108		
*Actuarial Science 1, p. 122	1	"

Third Year.

English 3a, 3b, p. 97	3	hours
Philosophy 11, p. 117	3	"
One of Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
World History 1, p. 147	2	"
*History 3a, 3c, 5, 6, p. 106		
*Political Economy 1a, 1b, 7, 8, 9, 10, 11, 13, 15, pp. 107-110		
*Law 1, 2, 5, 6, pp. 113, 114		

**Honours.*

Fourth Year.

English 4a, 4b, p. 97	2	hours
One of Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2	"
World History 1 *or* 2, p. 147		
*History 4a, 4c, 5, 6, p. 106		
*Political Economy 1a, 1b, 17, 18, 19, 20, 22, 24, 25, 26, 27, 28, 29, pp. 107, 110-112.		
*Law 3, 4, p. 114		
*International Law 1, p. 115		

COMMERCE AND FINANCE.

Entrance Conditions.

A student who proposes to enter the Honour Course in Commerce and Finance is required to obtain at Honour Matriculation or at an equivalent examination at least 50% in English, at least 40% in Latin, Mathematics (Algebra, Geometry, Trigonometry) and in either German or French.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

First Year.

One of German 1a, p. 100	4	hours
French 1a, p. 102	4	"
One of Greek and Roman History 1, p. 92	1	"
Mathematics 6, p. 120	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
*English 1a, 1b, pp. 96, 97	2	"
*History 1, 5, p. 106	1	"
*Political Economy 2, p. 107	1	"
*Actuarial Science 1, 3, p. 122	2	"

**Honours.*

Second Year.

English 2a, 2c(ii), pp. 97, 98	2	hours
Two of Latin 2a, p. 90	4	"
German 2a, p. 100	4	"
French 2a, p. 102	4	"
Mathematics 12, p. 120	2	"
Physics 1, 2 part, p. 124	4	"
Chemistry 1, 14, pp. 140, 141	4	"
Geology 2a, 2b, p. 142	4	"
One of History 2a, p. 106	1	"
Mechanics 9, p. 122	1	"
Geology 1, p. 142	1	"
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1	"
Military Instruction 1, p. 147		
*Political Economy 1a, 1b, 3, 4, pp. 107, 108		
*Actuarial Science 2, 4, 5, 6, p. 122		
One of the languages of the First Year must be continued in the Second Year	2½	"

Third Year.

English 3a, 3b, p. 97	3	hours
One of Latin 3a, p. 90	2	"
German 3a, p. 100	2	"
French 3a, p. 102	2	"
Italian 1a, 1b, p. 104 *or* Spanish 3a, p. 105	2	"
Physics 3b, 5, 6 part, p. 124	6	"
Chemistry 3a, 15, pp. 140, 141	6	"
Geology 5, 18, pp. 142, 143, and Mineralogy 6, p. 144	6	"
One of History 3a, 3d, p. 106	3	"
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
World History 1, p. 147	2	"
One of *Political Economy 9, 10, 13, 14, pp. 109, 110		
*Actuarial Science 7, 8, p. 120		
*Political Science 1a, 1b, 7, 8, 11, 12, 15, 33, pp. 107-110, 113		

The Chemistry option is open only to those who have taken Chemistry in the Second Year.

Fourth Year.

English 4a, 4b, p. 98	3	hours
One of Latin 4a, p. 91	2	"
German 4a, p. 101	2	"
French 4a, p. 102	2	"
Italian 2a, 2b, or 4a, 4b, pp. 104, 105, *or* Spanish 2a, 2b, p. 105	2	"

**Honours.*

Fourth Year—*Con.*

Physics 4, 6 part, 13 part, p. 124	6 hours
Chemistry 7, 8, 25, pp. 140, 141	6 "
Geology 10, 12 part, 17, p. 142 and Mineralogy 8 part, p. 144	6 "
One of History 4a, 4c, p. 106	2 "
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2 "
World History 1, p. 147	
One of *Political Economy 20, 21, p. 111	
*Actuarial Science 9, p. 122	
*Political Science 1a, 1b, 17, 18, 19, 22, 23, 24, 25, 26, 27, 30, pp. 107, 110-112	

The Chemistry option is open only to those who have taken Chemistry in the Third Year.

PHILOSOPHY.

Entrance Conditions.

A student who proposes to enter the Honour Course in Philosophy is required to obtain at Honour Matriculation or at an equivalent examination at least 50% in English, 40% in Latin and Mathematics (Algebra and Geometry) and either 50% in History or 40% in one of Greek, French, German, Physics. In special cases, when permission is granted by the Council of the Faculty of Arts, these requirements may be met at the end of the First Year.

A candidate who obtains an average of 60% in the Pass Course or in any of the Honour courses at the examination of the First Year may in the Second Year proceed in the Special Course in Philosophy.

First Year.

COURSE A.

1. English 1a, 1b, pp. 96, 97	2 hours
2. Latin 1a, p. 90	4 "
3. One of Greek 1a, p. 88	4 "
Hebrew 1b, p. 93	4 "
German 1a, p. 100	4 "
French 1a, p. 102	4 "
Italian 1a, 1b, p. 104 *or* Spanish 1a, 1b, p. 105	3 "
4. A second language from 3	4 "
Zoology 1, p. 129	3 "
5. Mathematics 6, p. 120	4 "
6. One of Greek and Roman History 1, p. 92	1 "
Mathematics 6, p. 120	1 "
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1 "

**Honours.*

COURSE B.

Zoology 1, p. 129	3	hours
One of Mathematics 6, p. 120	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
One of *Greek 1c, p. 89	5	"
*Latin 1b, p. 91	5	"
*Hebrew 1b, p. 93	4	"
*German 1c, 1d, p. 100	4	"
*French 1b, p. 103	4	"
*Greek and Roman History 1, p. 92	1	"
*English 1a, 1c, p. 97	2	"
*Philosophy 1, p. 116	1	"

Second Year.

English 2a, 2c (II), pp. 97, 98	3	"
One of Greek 2a, p. 88	4	"
Latin 2a, p. 90	4	"
Hebrew 2b, p. 93	4	"
German 2a, p. 100	4	"
French 2a, p. 102	4	"
History 2a, p. 106	2	"
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	2	"
Military Instruction 1, p. 147		
*Philosophy 2, 4, 5, 6, p. 116 *or*	7	"
*Philosophy 7, 8, 9, 10, p. 117	7	"

Third Year.

One of English 3a, 3b, p. 97	3	hours
Hebrew 3b, p. 94	2	"
German Philosophical Texts	2	"
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
Political Economy 7, 8, pp. 108, 109		
*Philosophy 12, 14, 15, 16, 17, pp. 117, 118 *or*		
*Philosophy 18, 19, 20, 21, 22, p. 118		

Fourth Year.

One of English 4a, 4b, p. 98	3	hours
Hebrew 4b, p. 95	2	"
German Philosophical Texts	2	"
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2	"
*Philosophy 24, 25, 27, 28, 29, 30, pp. 118, 119 *or*		
*Philosophy 31, 32, 33, 34, 35 36, p. 119		

**Honours.*

PHILOSOPHY, ENGLISH AND HISTORY.

Entrance Conditions.

A student who proposes to enter the Honour Course in Philosophy, English and History is required to obtain at Honour Matriculation or at an equivalent examination at least 50% in English, 40% in Latin and Mathematics (Algebra and Geometry) and either 50% in History or 40% in one of Greek, German, Physics.

In special cases when permission is granted by the Council of the Faculty of Arts, these requirements may be met at the end of the First Year.

First Year.

(Available 1919-1920).

Zoology 1, p. 129	3	hours
One of Mathematics 6, p. 120	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
One of *Greek 1c, p. 89	5	"
*Latin 1c, p. 91	5	"
*German 1c, 1d, p. 103	4	"
*French 1b, p. 103	4	"
*Greek and Roman History 1, p. 92	1	"
*English 1a, 1c, p. 97	2	"
*Philosophy 1, p. 116	1	"

Second Year.

(Available 1920-1921).

Political Economy 5, p. 108	1	hour
One of Selected Texts in History and Philosophy		
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 146	2	"
Military Instruction 1, p. 147		
*English 2a, 2c, pp. 97, 98		
*History 2c, p. 106		
*Philosophy 4, 5, 6, p. 116 *or*		
*Philosophy 8. 9, 10, p. 117		

Third Year.

(Available 1921-1922).

One of Selected Texts in History and Philosophy
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147
*English 3b, 3d, p. 98
*History 3a, p. 106
*Philosophy 12, 13, 14, p. 117
*Philosophy 18, 19, 22, p. 118

**Honours.*

Fourth Year.

(Available 1922-1923).

One of Selected Texts in History and Philosophy
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147
Political Economy 28, p. 112
*English 4b, 4d, pp. 98, 99
*History 4a, p. 106
*Philosophy

MATHEMATICS AND PHYSICS.

Entrance Conditions.

A student who proposes to enter the Honour Course in Mathematics and Physics is required to obtain at Honour Matriculation or at an equivalent examination at least 50% in Mathematics (Algebra, Geometry, Trigonometry), at least 40% in Latin, Physics, as well as in either German or French.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

First Year.

English 1a, 1b, pp. 96, 97	2	hours
One of German 1a, p. 100	4	"
French 1a, p. 102	4	"
One of Greek and Roman History 1, p. 92	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
*Mathematics 8, 9, 10, 11, p. 120	6	"
*Mechanics 1, p. 121	1	"
*Actuarial Science 1, p. 122	1	"
*Physics, 1, 2, 18, pp. 124, 126	5	"
*Chemistry 1, 14, pp. 140, 141	4	"

Second Year.

English 2a, 2b, p. 97	2	hours
One of German 2a, p. 100	4	"
French 2a, p. 102	4	"
One of History 2a, p. 106	1	"
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1	"
*Mathematics 13, 14, 15, p. 120	6	"
One of *Mathematics 16, p. 120		
*Actuarial Science 5, 6, p. 122		
*Mechanics 2, p. 121	1½	"
*Physics 3a, 4, 5, 6, p. 124		

* *Honours.*

Third Year.

One of History 3a, p. 106	3 hours
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2 "
World History 1, p. 147	2 "
*Mathematics 17, 18, p. 121	1 "
One of *Actuarial Science 7, 8, p. 122	11/5 "
*Physics 14, p. 125	11/5 "
*Mechanics 3, 4, 5, p. 122	42/5 "
*Astronomy 3, p. 123	
*Physics 12, 13, 15, 17, pp. 125, 126	92/5 "

Fourth Year.

One of History 4a, p. 106	2 hours
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2 "
World History 1 *or* 2, p. 147	2 "
MATHEMATICS DIVISION.	
Six of *Mathematics 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, p. 121 the choice to be determined by the Department	12 "
*Astronomy 4, p. 123	
One of *Mathematics 29, p. 121	
*Actuarial Science 9, p. 122	
PHYSICS DIVISION.	
One of *Mechanics 7, p. 122	½ "
*Mineralogy 6 (lectures), p. 144	
*Physics 19, 20, 21, 22 *or* 24, 23, 26, 27, pp. 126, 127	7¼ "
ASTRONOMY AND PHYSICS DIVISION.	
*Mathematics 19, p. 121	63/5 "
*Mechanics 6, 7, p. 122	2½ "
*Astronomy 4, 5, 6, 7, 8, p. 123	
*Physics 20, 27 (*Light*), pp. 126, 127	10¼ "

Candidates in the Astronomy and Physics Division are required to take the lectures of Course 20 during the Michaelmas Term and laboratory work in Optics of Course 27 for two afternoons a week during the Michaelmas Term.

PHYSICS.

Entrance Conditions.

A student who proposes to enter the Honour Course in Physics is required to obtain at Honour Matriculation or at an equivalent examination, at least 40% in Latin and Mathematics (Algebra, Geometry and Trigonometry) as well as in either German or French, and in at least one of Physics, Biology, Chemistry.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

**Honours.*

First Year.

English 1a, 1b, pp. 96, 97	2 hours
One of German 1b, p. 100	2 "
French 1b, p. 102	2 "
One of Mathematics 6, p. 120	1 "
Religious Knowledge 1a *or* 1b *or* 1c, p. 146	1 "
*Mechanics 1, p. 121	1 "
*Physics 1, 2, 18, pp. 124, 126	5 "
*Zoology 5, 6, p. 130	4 "
*Botany 5, 6, p. 134	3 "
*Chemistry 1, 13, pp. 140, 141	6 "

Second Year.

One of English 2a, 2b, p. 97	2 hours
German 2b, p. 100	2 "
French 2b, p. 102	2 "
Geology 1, p. 142	1 "
Religious Knowledge 2a *or* 2b, *or* 2c *or* 2d, p. 147	1 "
*Mathematics 8, 12, p. 120	4 "
*Physics 3a, 4, 5, 6, p. 124	9 "
*Chemistry 3a, 7, 15, 24, pp. 140, 141	8 "

Third Year.

One of English 3a, 3b, p. 97	3 hours
History 3a, p. 106	3 "
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d *or* 3e, p. 147	2 "
World History 1, p. 147	2 "
*Mathematics 15 (first half), p. 120	1 "
*Mechanics 3, 4, 5, p. 122	$4\frac{2}{5}$ "
*Physics 12, 13, 14, 15, 17, pp. 125, 126	

Fourth Year.

One of English 4a, 4b, p. 98	3 hours
History 4a, p. 106	3 "
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d *or* 4e, p. 147	2 "
World History 1, p. 147	2 "
*Mathematics 18, p. 121	
One of *Mechanics 7, p. 122	
*Geology 3, 4, p. 142	
One of *Physics 22 *or* 24, p. 126	
*Mineralogy 1, 4, p. 143	
*Physics 19, 20, 21, 23, 26, 27, pp. 126, 127	

**Honours*

BIOLOGY.

Entrance Conditions.

A student who proposes to enter the Honour Course in Biology is required to obtain at Honour Matriculation or at an equivalent examination at least 40% in Latin and Mathematics (Algebra, Geometry and Trigonometry) as well as in either German or French, and in at least one of Physics, Biology, Chemistry.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

First Year.

English 1a, 1b, pp. 96, 97	2	hours
One of German 1b, p. 100	2	"
French 1b, p. 102	2	"
One of Mathematics 6, p. 120	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
*Mechanics 1, p. 121	1	"
*Physics 1, 2, 18, pp. 124, 126	5	"
*Zoology 5, 6, p. 130	4	"
*Botany 5, 6, p. 134	3	"
*Chemistry 1, 13, pp. 140, 141	6	"

Second Year.

English 2a, 2b, p. 97	2	hours
One of German 2b, p. 100	2	"
French 2b, p. 102	2	"
One of Geology 1, p. 142	1	"
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 146	1	"
*Physics 3b, 4, 5, 6, p. 124	7	"
*Zoology 9, p. 130	4	"
*Botany 7, 9, p. 134	3	"
*Chemistry 3a, 7, 15, 24, pp. 140, 141	6	"
*Geology and Palaeontology 3, 4, p. 142	3	"
*Mineralogy and Petrography 1, 2, p. 143	2	"

Third Year.

English 3a, 3b, p. 97	3	hours
A reading knowledge of French and German for scientific purposes.		
One of History 3a, p. 106	3	"
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
Astronomy 3, p. 123	2	"
*Zoology 7, 8, 12, 13, pp. 130, 131	9	"
*Botany 12, 17, 21, pp. 134, 135	9	"
*Biochemistry 1, p. 137	2	"
*Physiology 1, 6, p. 139	5	"

**Honours.*

Fourth Year.

English 4a, 4b, p. 98	3 hours
A reading knowledge of French and German for scientific purposes.	
One of History 4a, p. 106	3 "
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2 "
World History 1, p. 147	2 "
*Zoology 15, 19, p. 131	
*Botany 16, 21, p. 135	
One of the following divisions:	

Division I. Zoology, Histology, Embryology.

1. Zoology 20 (Histology), p. 131	4 hours
2. Zoology 16 (Embryology), p. 131	4 "
3. One of Zoology 21 (Vert. Zool.), p. 132	4 "
Zoology 22 (Invert. Zool.), p. 132	4 "
Zoology 23 (System. Zool.), p. 132	4 "
4. The two remaining subjects of 3 *or* Special work in *any* one subject of the Division	8 "

Division II. Botany.

1. Botany 18 (Œcology), p. 135	4 hours
2. Botany 10, *or* 11 (Phan. Bot.), p. 134	4 "
3. Botany 14 (Crypt. Bot.), p. 135	4 "
4. Special work in *any* one subject of the Division	8 "

Division III. General Biology (five subjects).

Zoology, 2 or 3 subjects of Division *I*	8 or 12 hours
Botany, 3 or 2 subjects of Division *II*.	12 or 8 "

Division IV. Teachers' Course.

Geology and Palæontology, 6 and 7, p. 142	4 hours
Mineralogy and Petrography 4, p. 143	4 "
Botany 8, 15, pp. 134, 135	4 "
Zoology 23, p. 132	4 "
Any one course in Div. *I* (Zoology) or Div. *II* (Botany)	4 "

BIOLOGICAL AND PHYSICAL SCIENCES.

Entrance Conditions.

A student who proposes to enter the Honour Course in Biological and Physics Sciences is required to obtain at Honour Matriculation or at an equivalent examination at least 40% in Latin and Mathematics (Algebra, Geometry and Trigonometry) as well as in either German or French, and in at least one of Physics, Biology, Chemistry.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

**Honours.*

First Year.

English 1a, 1b, pp. 96, 97	2 hours
One of German 1b, p. 100	2 "
French 1b, p. 102	2 "
One of Mathematics 6, p. 120	1 "
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1 "
*Mechanics 1, p. 121	1 "
*Physics 1, 2, 18, pp. 124, 126.	5½ "
*Zoology 5, 6, p. 130	4 "
*Botany 5, 6, p. 134	3 "
*Chemistry 1, 13, pp. 140, 141	6 "

Second Year.

English 2a, 2b, p. 97	2 hours
One of German 2b, p. 100	2 "
French 2b, p. 102	2 "
One of Geology 1, p. 142	1 "
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1 "
*Physics 3b, 4, 5, 6, p. 124	7 "
*Zoology 7, 8, p. 130	8 "
*Chemistry 3a, 7, 15, 24, pp. 140, 141	8 "

Third Year.

One of History 3a, p. 106	3 hours
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2 "
Astronomy 3, p. 123	2 "
*Zoology 11, 13, 14, pp. 130, 131	8 "
*Anatomy 1, 2, p. 136	10 "
*Biochemistry 1, 4, p. 137	2 "
*Physiology 1, 5, p. 139	6 "

Fourth Year.

One of History 4a, p. 106	3 hours
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2 "
World History 1, p. 147	2 "
*Zoology 15, 16,17, 18, p. 131	7 "
*Anatomy 3, p. 136	12 "

PHYSIOLOGICAL AND BIOCHEMICAL SCIENCES.

Entrance Conditions.

A student who proposes to enter the Honour Course in Physiological and Biochemical Sciences is required to obtain at Honour Matriculation or at an equivalent examination at least 40% in Latin and Mathematics (Algebra, Geometry and Trigonometry) as well as in either German or French and in at least one of Physics, Biology and Chemistry.

**Honours.*

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

First Year.

English 1a, 1b, pp. 96, 97	2	hours
One of German 1b, p. 100	2	"
French 1b, p. 102	2	"
One of Mathematics 6, p. 120	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
*Mechanics 1, p. 121	1	"
*Physics 1, 2, 18, pp. 124, 126	5½	"
*Zoology 5, 6, p. 130	4	"
*Botany 5, 6, p. 134	3	"
*Chemistry 1, 13, pp. 140, 141	6	"

Second Year.

English 2a, 2b, p. 97	2	hours
One of German 2b, p. 100	2	"
French 2b, p. 102	2	"
One of Geology 1, p. 142	1	"
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1	"
*Physics 3b, 4, 5, 6, p. 124	7	"
*Zoology 7, 30, pp. 130, 132	5	"
*Anatomy 1, 2, p. 136	8	"
*Chemistry 3a, 15, 24, pp. 140, 141	6	"

Third Year.

One of Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	hours
World History 1, p. 147	2	"
*Zoology 13, 31, 32, pp. 131, 132	4	"
*Anatomy 3, p. 136	12	"
*Biochemistry 1, 3, p. 137	8	"
*Physiology 1, 5, p. 139	6	"

Fourth Year.

One of Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2	hours
World History 1, p. 147	2	"
*Physics 13 part, 25 part, pp. 124, 126	½	"
*Anatomy 4, p. 136	2	"
*Biochemistry 2, 5, p. 137	9	"
*Physiology 2, 3, 7, p. 139	11	"

**Honours.*

CHEMISTRY AND MINERALOGY.

Entrance Conditions.

A student who proposes to enter the Honour Course in Chemistry and Mineralogy is required to obtain at Honour Matriculation or at an equivalent examination at least 40% in Latin and Mathematics (Algebra, Geometry and Trigonometry) as well as in either German or French and in at least one of Physics, Biology, Chemistry.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

First Year.

English 1a, 1b, p. 97	2	hours
One of German 1b, p. 100	2	"
French 1b, p. 102	2	"
One of Mathematics 6, p. 120	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
*Mechanics 1, p. 121	1	"
*Physics 1, 2, 18, pp. 124, 126	5	"
*Zoology 5, 6, p. 130	4	"
*Botany 5, 6, p. 134	3	"
*Chemistry 1, 13, pp. 140, 141	6	"

Second Year.

English 2a, 2b, p. 97	2	hours
One of German 2b, p. 100	2	"
French 2b, p. 102	2	"
One of Geology 1, p. 142	1	"
Chemistry 6b, p. 140		
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1	"
*Mathematics 12, p. 120	2	"
*Physics 3a, 4, 5, p. 124		
*Chemistry 3a, 7, 9, 16, pp. 140, 141		
*Geology and Palaeontology 3, 4, p. 142	3	"
*Mineralogy and Petrography 1, 3, 4, p. 143	5	"

Division I.

Third Year.

A reading knowledge of French and German for scientific purposes.

One of History 3a, p. 106	3	hours
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
Chemistry 6b, p. 140		
World History 1, p. 147	2	"
*Mathematics 18, p. 121		
*Physics 6, p. 123		
*Chemistry 4, 8, 10, 12, 19, 20, 25, pp. 140, 141		
*Mineralogy and Petrography, 6 *or* 8, p. 144		

**Honours.*

Fourth Year.

A reading knowledge of French and German for scientific purposes.
One of History 4a, p. 106 — 3 hours
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147 — 2 "
Chemistry 6a, p. 140
World History 1, p. 147 — 2 "
*Physics 16, p. 126
One of *Zoology 9, 12, pp. 130, 131
*Botany 7, 9, p. 134
*A defined part of Chemistry 21, p. 141
*Chemistry 5, 6a, 11, 21, pp. 140, 141

Division II.

Third Year.

One of English 3a, 3b, p. 97 — 3 hours
History 3a, p. 106 — 3 "
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147 — 2 "
World History 1, p. 147 — 2 "
A reading knowledge of French and German for scientific purposes.
*Physics 6, p. 124
*Chemistry 8, p. 140
*Geology and Palaeontology 5, 6, 7, 8, p. 142
*Mineralogy and Petrography 5, 6, 7, 8, 11, p. 144

Fourth Year.

One of English 4a, 4b, p. 98 — 3 hours
History 4a, p. 106 — 3 "
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147 — 2 "
World History 1, p. 147 — 2 "
A reading knowledge of French and German for scientific purposes.
One of *Zoology 9, 12, pp. 130, 131 — 4 "
*Botany 7, 9, p. 134
*Geology and Palaeontology 11, 17, pp. 142, 143
*Geology and Palaeontology 9, 10, 12, 15, 16, pp. 142, 143
*Mineralogy and Petrography 9, 10, 12, 13, 14, p. 144

CHEMISTRY.

Entrance Conditions.

A student who proposes to enter the Honour Course in Chemistry is required to obtain at Honour Matriculation or at an equivalent examination at least 40% in Latin and Mathematics (Algebra, Geometry and Trigonometry) as well as in either German or French and in at least one of Physics, Biology, Chemistry.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

**Honours.*

First Year.

English 1a, 1b, p. 97.	2	hours
One of German 1b, p. 100	2	"
French 1b, p. 102	2	"
One of Mathematics 6, p. 120	1	"
Religious Knowledge 1a *or* 1b, *or* 1c, p. 146	1	"
*Mechanics 1, p. 121	1	"
*Physics 1, 2, 18, pp. 124, 126	5	"
*Zoology 5, 6, p. 130	4	"
*Botany 5, 6, p. 134	3	"
*Chemistry 1, 13, pp. 140, 141	6	"

Second Year.

English 2a, 2b, p. 97
One of German 2b, p. 100
French 2b, p. 102
One of Geology 1, p. 142
Chemistry 6b, p. 140
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147
*Mathematics 12, p. 120
*Physics 3a, 4, 5, p. 124
*Chemistry 3a, 7, 9, 16, 17, 26, pp. 140, 141
*Mineralogy and Petrography 1, 2, p. 143

Third Year.

A reading knowledge of French and German for scientific purposes.
One of Chemistry 6a, p. 140
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147
*Mathematics 18, p. 121
*Chemistry 4, 8, 10, 12, 19, 20, 25, pp. 140, 141
*Mineralogy and Petrography 3, p. 143

Fourth Year.

A reading knowledge of French and German for scientific purposes.
One of Chemistry 6b, p. 140
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147
*Chemistry 5, 6a, 11, 21, pp. 140, 141

GEOLOGY AND MINERALOGY.

Entrance Conditions.

A student who proposes to enter the Honour Course in Geology and Mineralogy is required to obtain at Honour Matriculation or at an equivalent examination, at least 40% in Latin and Mathematics (Algebra, Geometry, Trigonometry) as well as in either German or French and in at least one of Physics, Biology, Chemistry.

**Honours.*

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

First Year.

English 1a, 1b, p. 97	2	hours
One of German 1b, p. 100	2	"
French 1b, p. 102	2	"
One of Mathematics 6, p. 120	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
*Mechanics 1, p. 121	1	"
*Physics 1, 2, 18, pp. 124, 126	5	"
*Zoology 5, 6, p. 130	4	"
*Botany 5, 6, p. 134	3	"
*Chemistry 1, 13, pp. 140, 141	6	"

Second Year.

English 2a, 2b, p. 97	2	hours
One of German 2b, p. 100	2	"
French 2b, p. 102	2	"
One of Geology 1, p. 142	1	"
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1	"
*Physics 3b, 4, 5, 6, p. 124	7	"
*Zoology 9, p. 130	4	"
*Botany 7, 9, pp. 134	3	"
*Chemistry 3a, 7, 15, 24, pp. 140, 141	6	"
*Geology and Palaeontology 3, 4, p. 142	3	"
*Mineralogy and Petrography 1, 2, p. 143	2	"

Third Year.

One of English 3a, 3b, p. 97	3	hours
History 3a, p. 106	3	"
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
World History 1, p. 147	2	"

A reading knowledge of French and German for scientific purposes.
*Zoology 12, p. 131
*Chemistry 17, p. 141
*Geology and Palaeontology 5, 6, 7, 8, p. 142
*Mineralogy and Petrography 3, 4, 6, 8, 11, pp. 143, 144

**Honours.*

Fourth Year.

One of English 4a, 4b, p. 98	3	hours
History 4a, p. 106	3	"
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2	"
World History 1, p. 147	2	"

A reading knowledge of French and German for scientific purposes.

One of *Zoology 23 in part, p. 132	3	"
*Botany 8, 15, pp. 134, 135		
*Geology and Palaeontology 11, p. 142 *and*		
*Mineralogy and Petrography 14, p. 144		

*Geology and Palaeontology 9, 10, 12, 13, 14, 15, 16, 17, pp. 142, 143
*Mineralogy and Petrography 5, 7, 9, 12, 13, p. 144

HOUSEHOLD SCIENCE.

Entrance Conditions.

A student who proposes to enter the Honour Course in Household Science is required to obtain at Honour Matriculation or at an equivalent examination at least 40% in Latin and Mathematics (Algebra, Geometry and Trigonometry) as well as in either German or French and in at least one of Physics, Biology, Chemistry.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

First Year.

English 1a, 1b, p. 97	2	hours
One of German 1b, p. 100	2	"
French 1b, p. 102	2	"
One of Mathematics 6, p. 120	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
*Mechanics 1, p. 121	1	"
*Physics 1, 2, 18, pp. 124, 126	5	"
*Zoology 5, 6, p. 130	4	"
*Botany 5, 6, p. 134	3	"
*Chemistry 1, 13, pp. 140, 141	6	"

Second Year.

1919-1920.

English 2a, 2b, p. 97	2	hours
One of German 2b, p. 100	2	"
French 2b, p. 102	2	"
One of History 2a, p. 106	1	"
Geology 1, p. 142	1	"
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 146	1	"

**Honours.*

***Physics 3b, 4, 5, 6, p. 124**	7	"
***Zoology 10, p. 130**	3	"
***Botany 13, p. 133**	4	"
***Biochemistry 10, p. 134**	2	"
***Chemistry 3a, 7, 15, 24, pp. 140, 141**	6	"
***Household Science 2, p. 145**	3	"

(Available 1920-1921).

English
German *or* French
Geology *or* Religious Knowledge
*Physics
*Zoology
*Botany
*Chemistry
*Household Science

Third Year.

1920-1921.

English 3a, 3b, p. 97	3	hours
One of History 3a, p. 106	3	"
Political Economy 16, p. 110	3	"
Philosophy 11, p. 117	3	"
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2	"
***Biochemistry 1, 3, p. 137**	6	"
***Physiology 1, 6, p. 139**	5	"
***Household Science 3, p. 145**	10	"
***Hygiene and Sanitation**	1	"

(Available 1921-1922).

English *or* History *or* Religious Knowledge
*Biochemistry
*Physiology *or* Zoology *or* Botany
*Household Science
*Hygiene and Sanitation

Fourth Year.

1921-1922.

English 4a, 4b, p. 98	3	hours
One of History 4a, p. 106	3	"
Political Economy 31, p. 112	3	"
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2	"
Food Chemistry 1, 3, p. 138	10	"
***Household Science 4, 5, 6, p. 145**	10	"

**Honours.*

(Available 1922-1923).

English *or* History *or* Religious Knowledge
*Food Chemistry *and*
*Household Science

or

*Food Chemistry *and* Household Science (part) *and*
*Geology and Palaeontology *and*
*Mineralogy and Petrography

HOUSEHOLD ECONOMICS AND SCIENCE.

Entrance Conditions.

A student who proposes to enter the Honour Course in Household Economics and Science is required to obtain at Honour Matriculation or at an equivalent examination at least 40% in Latin and Mathematics (Algebra, Geometry and Trigonometry) as well as in either German or French and in at least one of Physics, Biology and Chemistry.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

First Year.

English 1a, 1b, p. 97	2 hours
One of German 1b, p. 100	2 "
French 1b, p. 102	2 "
One of Mathematics 6, p. 120	1 "
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1 "
Household Science 1, p. 145	1 "
*Mechanics 1, p. 121	1 "
*Physics 1, 2, 18, pp. 124, 126	5 "
*Zoology 5, 6, p. 130	4 "
*Botany 5, 6, p. 134	3 "
*Chemistry 1, 13, pp. 140, 141	6 "

Second Year.

(Available 1919-1920).

One of English 2a, 2b, p. 96	2 hours
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 146	2 "
One of German 2b, p. 100	2 "
French 2b, p. 102	2 "
*Zoology 10, p. 130	2 "
*Botany 13, p. 134	2 "
*Chemistry 3b, 15 (part), pp. 140, 141	2 "
*Household Science 2, p. 145	6 "

**Honours.*

Third Year.

(Available 1920-1921).

Philosophy (Ethics)	
One of English	
History	
Religious Knowledge	
*Biochemistry	7 hours
*Household Science	10 "
*Hygiene and Sanitation	1 "

Fourth Year.

(Available 1921-1922).

Political Economy	
One of English	
History	
Philosophy (Ethics)	
Religious Knowledge	
*Food Chemistry	8 hours
*Household Science	10 "

SCIENCE FOR TEACHERS.

Entrance Conditions.

A student who proposes to enter the Honour Course in Science for Teachers is required to obtain at Honour Matriculation or at an equivalent examination at least 40% in Latin and Mathematfcs (Algebra, Geometry and Trigonometry) as well as in either German or French and in at least one of Physics, Biology and Chemistry.

A student who, on admission to this course, has not fulfilled all the entrance conditions, must do so at the examination of the First Year. Vide Secs. 58-62, pp. 38, 39.

First Year.

English 1a, 1b, p. 97	2 hours
One of German 1b, p. 100	2 "
French 1b, p. 102	2 "
One of Mathematics 6, p. 120	1 "
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1 "
*Mechanics 1, p. 121	1 "
*Physics 1, 2, 18, pp. 124, 126	5 "
*Zoology 5, 6, p. 130	4 "
*Botany 5, 6, p. 134	3 "
*Chemistry 1, 13, pp. 140, 141	6 "

**Honours.*

Second Year.

English 2a, 2b, p. 97	2 hours
One of German 2b, p. 100	2 "
French 2b, p. 102	2 "
One of Geology 1, p. 142	1 "
Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 147	1 "
*Mathematics 12, p. 120	2 "
*Physics 3a, 5, 6 part, 7, p. 124	6 "
*Zoology 9, p. 130	4 "
*Botany 7, 9, p. 134	3 "
*Chemistry 7, 15 part, pp. 140, 141	4 "
*Geology and Palaeontology 3, 4, p. 142	3 "
*Mineralogy and Petrography 1, 2, p. 143	2 "

Third Year.

One of History 3a, p. 102	3 hours
Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, or 3e, p. 147	2 "
World History 1, p. 147	2 "
*Astronomy 3, p. 123	2 "
*Physics 4, 6 part, 13, pp. 124, 125	6 "
*Zoology 7 (part), 12, pp. 130, 131	3 "
*Botany 17 part, p. 135	3 "
*Chemistry 3b, 15 part, 24, pp. 140, 141	5 "
*Geology and Palaeontology 5, p. 142	2 "
*Mineralogy and Petrography 3, 4, p. 143	4 "

Fourth Year.

One of History 4a, p. 102	3 hours
Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 146	2 "
World History 1, p. 147	2 "
*Astronomy 2, p. 123	2 "
*Physics	4 "
*Zoology 23, p. 132	4 "
*Botany 12, p. 134	4 "
*Chemistry	5 "
*Geology and Palaeontology	4 "
*Mineralogy and Petrography 6, part 11, p. 144	4 "
*One of Physics	8 "
Zoology 16, 20, p. 131	8 "
*Botany 10 *or* 14, 20, pp. 134, 135	8 "
*Chemistry	8 "
*Geology and Palaeontology	8 "
*Mineralogy and Petrography 7, 8, part 12, 14, p. 144	8 "

**Honours.*

ARTS AND FORESTRY.

Six Year Course.

The following schedule shows the subjects and amount of time to be devoted to each. In order to meet the exigencies of the time-table their location in each year may be varied, with the concurrence of the Faculties concerned.

First Year.

Latin 1a, p. 90, *or* Greek 1a, p. 88	4	hours
English 1a, 1b, pp. 96, 97	2	"
German 1a, p. 100, *or*	4	"
French 1a, p. 102	4	"
Mathematics 1, 4, 6, *or* 3, 5, 7, pp. 119, 120	3	"
Mechanics 1, p. 121 and	1	"
Physics 1, 2, *or* 9, 10, pp. 124, 125	4	"
Zoology 5, 6, p. 130	2	"
One of Greek and Roman History 1, p. 92	1	"
Religious Knowledge 1a, *or* 1b, *or* 1c, p. 146	1	"
Forestry 1 (synopsis)	1	"

Second Year.

English 2a, 2b, p. 97	2	hours
German 2a, p. 100, *or*	4	"
French 2a, p. 102	4	"
History 2a, p. 106	1	"
Botany 3, 4, 10, pp. 133, 134	7	"
Chemistry 1, 14, pp. 140, 141	4	"
One of Latin 2a, p. 90	4	"
Physics 3, p. 124	1½	"
One of Religious Knowledge 2a, *or* 2b, *or* 2c, *or* 2d, p. 146	1	"
Geology 1, p. 142	1	
Forestry 2a	4	"

Third Year.

English 3a, 3b, p. 97	3 hours
German 3a, p. 100, *or*	2 "
French 3a, p. 102	2 "
Mathematics 12, p. 121, *or*	
Actuarial Science	
Botany 5, 9, p. 134	7 "
Chemistry 3a, p. 140	1 "
Geology and Mineralogy, see Forestry Calendar	3½ "
One of Religious Knowledge 3a, *or* 3b, *or* 3c, *or* 3d, *or* 3e, p. 147	2 "
World History 1, p. 147	2 "
Surveying and Map Drawing	7 "
Forestry 2b, 8	3 "

Fourth Year.

History 4a, p. 106	2 hours
Geology 10, p. 142	1 "
One of Philosophy 13, p. 117	2 "
Physics 4, 5, p. 124	2 "
Chemistry 4, *or* 7, p. 140	2 "
One of Religious Knowledge 4a, *or* 4b, *or* 4c, *or* 4d, *or* 4e, p. 147	2 "
World History 1, p. 147	2 "
Surveying (Topographic)	7 "
Forestry 6, 9	9 "
Extra field work	4 weeks

Fifth Year.

English 4a, 4b, p. 98	2 hours
Political Economy 1b, 3, pp. 107, 108	2 "
Law 4, p. 114	2 "
Philosophy 23, p. 118 *or*	3 "
Science	3 "
Zoology 34	2 "
Forestry 3, 4, 5, 7, 11	6 "
Extra field work	4 weeks

Sixth Year.

Political Economy 33, p. 113	1 hours
Chemistry 12, p. 140	1 "
Philosophy	3 "
Engineering	
Forestry 10, 12, 13, 14, 15, 16	

Summary.

Latin	4 (+4)	hours
English	9	"
German	10	"
French	10	"
Mathematics	5	"
History	7	"
Political Economy	7	"
Law	1	"
Philosophy	3 (+4)	"
Physics	4 (+3)	"
Biology	19	"
Chemistry	11	"
Geology	11	"
Religious Knowledge	6	"
Surveying	10	"
Engineering	4	"
Science	3 (+7)	"
Forestry	31	"

Hours in parenthesis are options exchangeable with other Departments

REGISTER OF STUDENTS, 1918-1919.

Faculty of Arts.

UNIVERSITY OF TORONTO.

Occasional Students.

Allen, Miss M. E.....Burlington
Ayer, Miss E. F...Portsmouth, Va.
Bain, Miss M.....Toronto
Baker, Miss M. E.....Toronto
Bere, G. S.....London
Bibby, Miss M. V.....Brighton
Buchanan, Mrs. M. A....Toronto
Carr, Miss M. M.....Toronto
Cole, Miss F.....Toronto
Conlin, Miss E. E.....Toronto
Downey, Miss H. E.....Toronto
Graham, Miss M. M.....Toronto
Hawkins, Miss M. M.....Toronto
Hillock, Miss J. S.....Toronto
Lambier, L. F.....Dunnville
Lang, Miss A.L., Indian Head, Sask.
MacDonald, T. A.,
Auburnville, N.B.
Murray, Miss W. G.....Toronto
Nichol, S. W.....Toronto
O'Connell, Miss M. E.....Toronto
Philips, Mrs. E. M.....Toronto
Pringle, Miss G.....Toronto
Pugsley, Miss H.R., Parrsboro, N.S.
Scott, Mrs. L. E.....Toronto
Smith, A.....Toronto
Walker, Miss M.....Toronto
Wallace, S. A.....Toronto
Ward, Miss A. L.....Cobourg
Wilson, Miss A.....Toronto

ONTARIO VETERINARY COLLEGE.

First Year.

Anderson, H. H.,
Youngstown, Alta.
Bond, E. W.....Roland, Man.
Erickson, H. E...Menomanie, Wis.
Foster, O. A.....Campbellville
Honeywell, H. M.....Cannifton
Johnston, E. F.....Carp
Lumsden, M. D..Trinidad, B.W.I.
Mandley, E. G.....Toronto
Nicholas, A. L.....Riceville
Ormiston, R. R.....Raglan
Owen, H. M.....Toronto
Penhall, G. R.....Waterford
Smith, G. W.....Yorkton, Sask.
Thomson, W. G...Keremeos, B.C.
Tingley, H. J.....Grenfell, Sask.

Second Year.

Clarke, W. S.....Stratford
Coulter, T. J...Saergertown, Pa.
Cowie, R. G.....Assiniboia, Sask.
Drennan, W. J.....Alliston
Frew, A. G.....Scotland
Gleason, J. L.....Lakeside
Gray, N. L.....Manor, Sask.
Heath, L. M.....Toronto
Law, R. G.....Toronto
McDonald, G. G., Assiniboia, Sask.
Naismith, J. W.....Milton West
Nesbitt, J. E.....Merivale
Pallett, E. E. St. G., Arbury, Sask.
Randall, F. B.....Hanna, Alta.
Stanley, G. E.....Holland Centre
Turner, L. E.....Mono Road
Wheatley, R. H. B.,
Gateshead-on-Tyne, Eng.

Third Year.

Andries, A. J.....Deloraine, Man.
Armstrong, G. P..Rossburn, Man.
Armstrong, J. H. O.....Ottawa
Beals, E. B.....Greene, Me.
§Bescoby, F. H....Stonewall, Man.
Brazenall, F.....Bury, Que.
Carter, S. W.....Jacksonville, Ill.
Chase, S. H.....Consecon
Davis, H. J.....Woodstock
Fisher, J. R.....Brandon, Man.

§On active service.

Gibson, H. H.....Newport, N.S.
§Gwatkin, R.....Strassburg, Sask.
Herman, LeR. L.,
Williamsville, N.Y.
Houston, J. E.....Toronto
Humphreys, F. A...Ardath, Sask.
Johnson, J. E.....Thedford
Kelleher, W. J.....Guelph
Laughlin, W. M....Chardon, O.
Learmonth, R.....Chicago, Ill.
Lindsay, W.....Rosseau
McAlpine, L. C....Vankleek Hill
McConnell, J. C...Hamiota, Man.
McKercher, D. A.,
Gravelbourg, Sask.
Marsden, H. W.....Excel, Alta.
Martinaglia, G.,
Randfontein, Transvaal, S.A.
Miller, G. B.,
Portage la Prairie, Man.
Miller, M. H.....Killarney, Man.
Nicholls, W. E.....Hamilton
Noble, I. B.....Tompkins, Sask.
Nurse, H. W.....Wallenstein
O'Neill, J. J...Sans Bruit, Que.
Richardson, C. H.....Toronto
Rivington, R. H.....Almonte
Smith, J. W.....Maxim, Sask.
Stevens, H. C.....Sonya
Thomas, E. B.....Box Grove
Ungar, E. B.....Napanee
Watson, W.....Howick, Que.
Webster, F. H.....Welwyn, Sask.

SUMMARY.

Occasional Arts Students.....	29
Ontario Veterinary College....	71
Total.....	100

§ On active service.

UNIVERSITY COLLEGE.

First Year.

*Indicates that the student attended in the Michaelmas Term only: †in the Easter Term only; ‡ dispensation during the session; || on active service; § returned from active service.

Adams, Miss A. M.....Peterboro
Adams, Miss H. H., Ensenore, N.Y.
Adsett, Chas.....Rockwood
Alexander, W. A.....Toronto
Allen, S.....Toronto
Archer, Miss M. E.....Toronto
Archer, P. S.....Toronto
§Armstrong, I. W.....Toronto
§Armstrong, J. C.....Ottawa
Arthur, Miss D. L.....Toronto
Baldwin, R. W.....Toronto
Bangs, C. R.....Ottawa
Bates, A. H.....Shelburne
Beale, Miss I. G., Bettendorf, Iowa
§Beattie, J. F. M.....Fergus
§Beatty, G. B.....Toronto
Beecroft, Miss C. I.....Toronto
Bell, Miss G., Indian Head, Sask.
Bell, W. T. A..... Oakville
Bergoine, Miss D. I.....Peterboro
Bickell, Miss O. I.....S. Oshawa
Bird, Miss G. R.....Barrie
§Blackwell, L. E.....Toronto
Bredin, W.....Toronto
Brennan, Miss E. A.....Dunnville
Brodey, A.....Toronto
*Brodie, Miss J. G.....Stouffville
Brown, Miss A. M. H.....Toronto
§*Buchanan, A.....Toronto
Bull, A. T.....(Ob.)
Butler, W. C.....Toronto
Calvert, G. R.....Kingston
Campbell, E. S.....Toronto
Campbell, Miss J. D.....Toronto
Campbell, W. S.....Brampton
Capreol, C. L.....Toronto
Carswell, Miss H. M.... Seaforth
Cave, Miss V. B., Hastings, Barbados
Chaikoff, J.....Toronto
Chambers, Miss M. L., Fenelon Falls
Clark, Miss M. I. H.....Toronto
§Clark, P. T.....Toronto
Clarke, Miss M. E..Palmerston
Cochrane, Miss H. M.....Toronto
Cockburn, Miss E. A.....Toronto
Cohen, Miss C. P.....Toronto
Comay, S.....Toronto
Cooper, Miss B.....Toronto
Cordingley, Miss K. D.....Toronto
‡Coventry, Miss J. M.....Toronto
Cowan, J. A.....Toronto
*Craig, Miss C. G.....Toronto
Crawford, A. R.....Toronto
Creed, Miss F. C.....Toronto
†Crombie, J. K. B...St. Catharines
Curry, A. G.....Windsor, N.S.
Curtis, Miss B. S.....Havelock
Curtis, C. A.....Smith's Falls
Dagger, Miss E. M. A...Toronto
Darker, G. D.....Streetsville
David, Miss W. M.....Toronto
Davidson, Miss M. E. G., Mimico Beach
Davis, E. A.....Ottawa
Dewey, H. W.....St. Mary's
§Dickie, W. C.....Chatham
*Dickson, Miss D. H....Westboro
Doran, Miss E. M.....Iroquois
Doran, Miss M. V.....Iroquois
Douglas, Miss F. I.....Toronto
§Douglas, J. W.....Toronto
Dow, Miss L. M.....Toronto
§Eakins, C. G.....Napanee
Egan, V. J.....Toronto
Elliot, B. V.....Norwich
Ewart, Miss A. A.....Toronto
Fair, G. L.....Toronto
Fair, Miss M. E.....Collingwood
Finkel, Miss C.....Toronto
Fisher, F. W.....Toronto
§Fitzgerald, M. R.....Toronto
Fleming, Miss M.....Perth
§Fletcher, C. L.....Melbourne
Fraser, Miss M. B.....Orillia
Fried, Miss M. H.....Toronto
Gallagher, T. H. L.....Toronto
Gamble, W. A. S..... Brantford
Gavin, Miss D. G.....Windsor
Gebirtig, Miss E.....Toronto
Gemmill, C. E.....Pakenham

Gesensway, A. S.....Toronto
§Gibson, J. A.....Toronto
Glazebrook, G. T.....Toronto
Gold, Miss S.....Toronto
Goldring, A. J.....Port Whitby
§Gordon, A. R.....Toronto
Gordon, Miss M. F.....Hamilton
Graham, Miss M. E.....Ottawa
*Greenwood, Miss J. E.....Ottawa
Griffiths, Miss G. M.....Fonthill
Groh, E. P.....Toronto
§Haas, K. E.....Toronto
Halliday, Miss F. F.....Chesley
Hambly, W. J.....Toronto
Hamilton, F. C.....Toronto
Hanks, Miss E. M..... Blenheim
Harris, Miss L. A.....Hamilton
Harrison, Miss G. P....Dunnville
Hathway, E. G.....Toronto
Hele, Miss S. E.....Mimico
Heslip, M. W.....Peterboro
Hickson, Miss B. N.....Toronto
Hill, D. C.....Ottawa
Hodgins, Miss I. L.....Stratford
Home, Miss R. M.....Welland
Hood, J. R.....Clifford
Hoover, G. I.....Weston
Houk, Miss A. L.....Dunnville
§Houston, F. B.....Toronto
§Howard, E. F.....Toronto
§Hudson, A. D.....Toronto
Hume, Miss A. K.....Toronto
Ingram, Miss H.,
Moose Jaw, Sask.
Ireland, Miss N. F. V.....Toronto
Jackson, Miss E. M. O.....Toronto
§Jackson, J. A.....Leamington
James, A. G. B.....Toronto
Jamieson, Miss M. J.....Simcoe
Jasperson, F. K.....Kingsville
Jenkins, F. L.....Vancouver, B.C.
§Jennings, J. E.....Toronto
Jephcott, C. M.....Toronto
Johnston, H. W.....Toronto
Johnston, M. C.....Toronto
Jones, C. O.....Toronto
Kearney, Miss M. B.....Toronto
§Keeler, J. W.....Toronto
Keens, Miss C. H.....Toronto
Kennedy, Miss S. K.....Arthur
Kennedy, W. A.....Toronto
Kitchen, C. E.....Toronto
Kiteley, Miss M. E..... Bradford
§Knott, G. A.....Toronto
Larkin, S.....Toronto
Legate, B. E.....Owen Sound
Lewis, Miss G. V.....Toronto
Lindsay, Miss J.....Georgetown
§Littlefield, C. G.....Toronto
Lowther, A. A.....Toronto
Lucas, S.....Downeyville
Luck, J. M.....Brantford
McAlpine, N. A.....Toronto
McClenahan, Miss O. I.,
Milton West
McCormick, N. A.....Walkerville
McCullough, Miss J. J...Harriston
McDerment, R.....Lucan
Macdonald, Miss A. H. G.,
Toronto
Macdonald, Miss I.....Stratford
McGillivray, D. J.....Whitby
MacIntyre, A. L.....Lindsay
§*McKay, A. R.....Hamilton
McKeown, Miss H..... Belleville
§McKeown, J. J. F.....Toronto
McKnight, Miss M. B.... Simcoe
McLaughlin, Miss D. M...Oshawa
McLaughlin, Miss M. A...Oshawa
MacLean, Miss H. M....Toronto
McLean, Miss M....Owen Sound
McMaster, Miss A.....Toronto
Macmillan, Miss J. R.....Toronto
MacNamara, Miss B. L...Toronto
McNeely, Miss C. A.,
Carleton Place
MacPherson, Miss J.....Tiverton
McQueen, D.....Stayner
McSweeney, Miss H. C. M.,
Toronto
Madill, Miss D. G.....Toronto
Mahon, Miss M. H.....Toronto
Maitland, Miss M.....Elora
§Maltby, E. J.....Toronto
Martin, J. B.....Calgary, Alta.
Martyn, E. R.....Ripley
Martyn, M.....Ripley
Matchett, H. B.....Toronto
Maybee, Miss A. L...Port Credit
Meredith, E. R.....Peterboro
Mitchell, Miss P. E.....Toronto
*Mitchell, W. H.....Toronto
§Mitchener, E. H.....Toronto
Moran, Miss M.....Toronto
Morrison, Miss H. K.,
Chesterville
Morson, Miss H. W.....Toronto
Morton, H. D.....Toronto
Muir, W. S.....Niagara Falls
Needler, Miss M. C.....Toronto
Paterson, Miss I. L.....Ingersoll
Paul, Miss J. A.....Wyoming
Pearl, Miss M. J.....Hamilton
§Pearson, F. W.....Toronto

Pepler, Miss K. G.....Toronto
Pidgeon, Miss M. A.....Toronto
Potter, Miss D.....Toronto
Pratt, Miss F. P.....Toronto
Pulling, Miss H. F..... Windsor
Purcell, G. M.....Guelph
Raney, Miss G. C.....Westboro
Reid, Miss M. E.....London
Reoch, Miss A.....Ottawa
Rhodes, Miss M. E.....Brockville
Rice, Miss M. R.....Welland
Rosebrugh, Miss M.....Toronto
Rosenthal, H.....Toronto
Ross, Miss E. M...Mount Albert
§Ross, J. D. F.....Toronto
Ross, J. L.....Erindale
Roulston, W. A.....Toronto
Rowe, W. G.....Toronto
Rowland, W. M.....Toronto
Rubin, Miss B.....Toronto
Russell, Miss J.....Fergus
Ryrie, R.....Toronto
Sapera, Miss E.....Toronto
Saunders, H. E.....Fort William
Schorman, Miss K. S.....Toronto
*Shapiro, Miss S.....Toronto
Shaw, Miss E. A. J.....London
Sheppard, Miss E. M.....Toronto
Sher, A.....Toronto
Sher, Miss B.....Toronto
Sher, D.....Toronto
Sherrin, Miss M. H. M...Toronto
Shields, Miss M. C.....Toronto
Simpson, H. E.....Elmvale
Sinclair, Miss H. I.....Toronto
Smith, Miss A. J.....Chatham
Solway, J. B.....Toronto
Spaidal, Miss M. G...Brockville
§Spaulding, H. E.....Aurora
Speirs, N. R.....Toronto
Stagg, Miss E. J.....Brockville
Stanley, Miss G.....Toronto
§Steacy, R. G.....Wiarton
§Stephenson, B. T.....Toronto
§Stewart, R. A.....Brussels
Stewart, S. R.....Toronto
Stillman, I.....Toronto
Stilwell, W. A.....Toronto
Stuart, Miss H. B. J. M.,
Niagara Falls
Stuart, Miss R. G.....Mitchell
Sutton, H. F.....Toronto
Swan, W. J. M.....Toronto
Taylor, A. C.....Simcoe
Taylor, Miss N. C.....Toronto
Taylor, W. E.....Pefferlaw
Telfer, Miss M. L....Collingwood
§Thoburn, A. C.....Ottawa
Thomas, E. W.....Toronto
§*Thompson, H. A. L.....Toronto
§Thomson, J. C..... Teeswater
Thomson, W. G.....Toronto
Trick, H. W.....Oshawa
Tucker, Miss A. D.,
Parrsboro, N.S.
†Twitchell, M. C.....Toronto
Urquhart, Miss A. L.....Toronto
§Urquhart, D.....Toronto
Valentine, Miss C. F....Waterloo
§Vaughan, A. H.....Swansea
Walkington, W. A.....Toronto
Walton, Miss M. J.....Toronto
Webb, W. G..... Hamilton
Webster, G..... Lucknow
Webster, H. F. R.....Toronto
Weinreb, Miss L. P.....Toronto
Weisman, E. S.....Sudbury
§Weiss, W.....Toronto
Wells, D. C.....Toronto
Wellwood, Miss I. L.....Toronto
Wheaton, H. B.....Toronto
White, Miss I. G.,
Moose Jaw, Sask.
White, K. S.....Toronto
Whyte, Miss V.....Stratford
Wilcox, J. E.....Beeton
Williams, R. K.....Toronto
Williamson, Miss W....Beaverton
Wilson, Miss J. A.....Toronto
Wilson, J. L.....Kamloops, B.C.
Wilson, Miss K. P.....Fergus
Wilson, W. G.....Midland
Wladowsky, Miss R.....Toronto
Wodehouse, Miss G. M...Toronto
Wood, Miss D. M.....St. Mary's
Wood, J. D.....Toronto
Woodland, F. A. L.....Toronto
§Wright, E. N.....Toronto
Wright, Miss M. C.....Toronto
Wright, Miss M. D. F...Toronto
Young, Miss L...Lethbridge, Alta.

Second Year.

Abernethy, Miss J. L.....Beeton
Adamstone, F. B.....Toronto
Allen, R. A.....Toronto
§Armstrong, E. C.....Science Hill
Atkinson, Miss E....Queensville
Beasley, Miss J. E.....Sandwich

Beasley, J. H.....Toronto
Bell, A. D.....Sarnia
§*Bell, D. W.....Shakespeare
Bell, Miss M. M...Niagara Falls
Belton, Miss A. M....Thorndale
§Best, C. H....West Pembroke, Me.
Billings, Miss G. M., Vernon, B.C.
Borsook, H.....Toronto
Breithaupt, Miss F. C., Kitchener
Brierly, Miss E. G.....Toronto
Bristol, Miss J. T.....Toronto
Bromberg, A.....Toronto
Brubacher, C. S.....Kitchener
Bryans, Miss H.....Toronto
Bryce, W. A.....Toronto
Bussell, W. F.....Toronto
Carver, L. D. S.....Peterboro
Chant, Miss E. H.....Toronto
Clark, Miss M. L.....Stouffville
Clothier, W. J. K.....Ottawa
§Commins, M. J.....Toronto
Connell, Miss M. I.....Lucknow
Cook, Miss G. M.....Toronto
Cornette, Miss C. L.....Dundalk
Coutts, J. M.....Thamesville
Cowan, Miss K. S.....Seaforth
Crawford, Miss K.....Ailsa Craig
Creery, Miss I. V.....Woodham
Cringan, Miss E. R..... Toronto
Crumb, Miss J. H.....Toronto
Currie, A. R. .....Duntroon
Davis, O.....Toronto
Day, Miss D.....Parrsboro, N.S.
Dingle, Miss D. A.....Brockville
Doidge, W. G.....Toronto
§Dunlop, W. S....St. John, N.B.
Enushevsky, Miss B.....Toronto
Faichney, T. T.....Hamilton
Findlay, D. M.....Toronto
Findlay, Miss H., Carleton Place
Finlay, P. C.....Pelee Island.
Finlayson, Miss B. M....Toronto
Folsetter, Miss H. J.....Paris
Forster, F. C.....Toronto
*Foster, E. C.....Northport
Fox, Miss E. G.....Cainsville
Fraser, Miss F. H.....York Mills
Gallagher, D. H.....Toronto
Gallagher, E. O.....Barrie
Gamble, Miss M. E.....Brantford
Glazier, Miss E. A. E., Brockville
Goldring, Miss J. F. A.,
Port Whitby
Grant, Miss A. A.....Toronto
Gray, Miss I. M.....Toronto
Gray, Miss K. H.....Toronto
Gray, Miss N. E.....Coldwater
§Graydon, A. R.....Toronto
Green, W. C., Moose Jaw, Sask.
§Green, W. E., Moose Jaw, Sask.
§Guest, R. C.....London
Hamilton, K. A.,
Moose Jaw, Sask.
Harbert, Miss E. M.,
Redcliffe, Alta.
Hardy, Miss D. S.....Toronto
Harkness, W. J. K.,
Vineland Station
Harstone, R. H.....St. Mary's
Hearst, Miss I.....Toronto
Henry, Miss E. M.....Stratford
§Hermeston, W. R..... Walkerton
Hill, Miss E. M.....Centralia
Hobden, Miss D. M.....Toronto
Inwood, Miss J. S.....Toronto
Irwin, J. C. W.....Toronto
§Irwin, W. J..... Markham
Jackson, Miss I. V.....Fairbank
*Jenkins, Miss M. R.....Orillia
*Kane, Miss B. M.....Toronto
Kennedy, Miss E. J.....Arthur
‡Knight, Miss M. A.....Wyoming
Knox, L. A.....Alma
Lane, Miss J. V.....Ottawa
Leggett, Miss E. G.....Newboro
Lehrman, S.....Toronto
Leonard, Miss A.....Toronto
Levi, Miss M.....Toronto
Lindsay, Miss E. I.....Weston
§Little, G. D.....Toronto
Lockhart, Miss H. I.....Hespeler
Loggie, Miss D. C., Chatham, N.B.
§Lorriman, F. R.....Thorold
Lyle, Miss E. H.....St. Thomas
McAlpine, K. L.....Tillsonburg
McCowan, Miss M. J.....Toronto
Macdonald, Miss E.,
Vankleek Hill
MacDonald, Miss E. M...Toronto
MacDonald, Miss H. M.,
Pictou, N.S.
McDougall, J. L.....Ottawa
MacGregor, Miss K.....Clinton
McHenry, E. W.....Toronto
MacLennan, H. A.....Hamilton
Maclennan, Miss J. E. H..Toronto
McLeod, C. H.....Collingwood
McMaster, Miss M. I....Toronto
§MacMillan, H. A.....Lucknow
McMurtry, Miss L. J. L.,
Moose Jaw, Sask.
§MacNamara, W. G.....Toronto
MacPherson, Miss G.,
Campbellton

*McQueen, Miss J. C.....Toronto
McTaggart, Miss M.....Clinton
Marsh, H. H.....Lindsay
Matthew, Miss E. P...Gananoque
Maxwell, Miss H. M., St. Mary's
*Meen, H.....Toronto
Mustard, Miss M. I....Uxbridge
Noble, E. C.....Toronto
Noble, W. H.....Toronto
Oliphant, W. S.....Collingwood
O'Meara, Miss M. M.....Ottawa
§Paisley, A. B.....Stouffville
Pearen, Miss E. M.....Rockwood
Phillips, Miss L. M.....Toronto
Porter, D. H.....Toronto
Porter, Miss N.....Toronto
Pugsley, Miss L. B.,
Parrsboro, N.S.
Rae, Miss J.....Toronto
Ramsay, E. B.....Toronto
Robertson, Miss M. I.....Ottawa
Rogers, Miss J.....Toronto
Ross, Miss R. W.....Ottawa
*Rotenberg, H.....Toronto
Russell, Miss M. E.....Fergus
§Ryckman, G. V.....Waterdown
Schell, Miss H. C.....Woodstock
Scott, Miss B. M.....Toronto
Scott, Miss E. R.....Toronto
Scrimgeour, Miss G.....Stratford
Seigal, M.....Toronto
Shaw, H. F. R.....Clinton
Sheppard, Miss E. M. P.,
Waubaushene
§†Sinclair, A. W. R.....Toronto
§Sinclair, D. J.....Gananoque
Smillie, J. M.....Toronto
Smilovitz, Miss R. L., Quebec, Que.
Smith, H. G.....Toronto
Smith, Miss J. H.....Lucan
Snell, Miss M. E.....Seaforth
§Sowers, R. V.....London
Speers, Miss L.....Yorkton, Sask.
Stanton, Miss C. J.....Toronto
Stephens, W. C.....Niagara Falls
Stewart, H. J. F.....Brockville
Stuchen, J.....Gananoque
Szammers, Miss R. A.....Toronto
Tait, R. G.....Clarksburg
Taylor, Miss E. M....Todmorden
Tilley, Miss D. L.....Toronto
Tremeer, Miss G.....Lindsay
Turnbull, W. L.....Hamilton
Twigg, Miss A. E. M.....Toronto
VanVelzer, Miss A. A...Dunboyne
Vaughan, W. S.,
Niagara-on-the-Lake
§Vining, C. M.....Toronto
Wallace, W. L.....Toronto
Wardlaw, Miss M. F.....Acton
Weatherall, Miss M. B.,
Southampton
Webb, Miss A. M.....Bradford
Webster, Miss M. G.,
Bevint, Syria
West, Miss L. B.....Toronto
Whitelaw, Miss F.....Woodstock
Wiley, Miss L. Y.....Brantford
Wilson, J. T.....Ottawa
§Wright, J. H.....Toronto
Young, Miss A. M.....Toronto
Young, Miss W. A.....Brantford

Third Year.

Adams, Miss G.....Brantford
Asman, Miss K. M.....Toronto
Baldwin, Miss A. M.....King
§Ballantyne, P. M.....Toronto
Beasley, Miss G.....Toronto
§Bell, J. K.....Toronto
Brebner, Miss M. R.....Toronto
Breslin, R.....Toronto
Brodie, Miss J. B.....Newmarket
§Brown, L. A.....Thorndale
Chalmers, Miss V. E.....Toronto
Christie, Miss J.....Hamilton
§‡Clewes, H. B.....Ottawa
†Cohen, W.....Toronto
Conner, R. R.....Mount Forest
Connolly, Miss M. A.....Toronto
Corless, Miss G.....Coniston
Cosgrove, Miss K., Ashville, N.C.
Courtnage, Miss E. G.,
Brantford
Cray, Miss K. E.....Guelph
Deadman, Miss E. F.....Brussels
Dickinson, Miss M. A....Toronto
Dyer, C. E.....Coldwater
Eadie, Miss H. I.....Toronto
Edge, Miss M. E.....Durham
Elliott, Miss N. E.....Belleville
Fines, E. A.....Camilla
Ford, Miss M. I. J.....Oakville
Forin, Miss I. D. M..Nelson, B.C.
§Forsyth, E. W.....Stouffville
Fraser, Miss H. R.,
New Glasgow, N.S.
Glaister, Miss H. I.....Wellesley
Goodman, S.....Toronto
Gray, Miss L.....Toronto

Hamilton, Miss J. E., Winnipeg, Man.
Hastings, F. C.....Dunnville
Hewitt, Miss A. A.....Toronto
§Holmes, T. B.....Toronto
Howell, Miss H. D.....Welland
Hutton, O. A.....St. Mary's
Jeffrey, H. G. S.....Puslinch
Jennison, J. D., New Glasgow, N.S.
Jones, C. A.....Kelowna, B.C.
Kellam, Miss M. C., Niagara Falls
Kirkwood, Miss H. C.....Toronto
Lambert, Miss E. M.....Sarnia
Lawrence, Miss M. I.....Toronto
§†Lennox, O. E.....Toronto
Lucas, G. H. W.....Middlemiss
Macaulay, R. D.....Dawson, Y.T.
McCrimmon, Miss H. M., Whitby
McEown, I.....Toronto
MacInnes, E. D.....Southampton
§Mackay, R. A.....Woodville
McLagan, Miss D.....Stratford
McLaren, Miss M. R.....Highgate
McLellan, Miss W. H.....Toronto
§McTavish, W. C.....Shakespeare
Madill, Miss I. F.....Toronto
Mark, G. P.....Toronto
Markus, J.....Toronto
Martin, G. S.....London
Maw, Miss I. M.....Toronto
Mills, Miss M.....Peterboro
Mitchell, Miss W. L.....Hagersville
Moran, Miss G.....Toronto
Morrison, N. F.....Corunna
Murao, M. S.....Osaka, Japan
§O'Connor, J. J.....Sudbury
O'Heir, Miss F. G.....Hamilton
Orr, Miss W. N.....Stratford
Page, S. U.....Toronto
Paterson, Miss F.....Owen Sound
Patrick, L.....Calgary, Alta.
Petrie, P. A.....Brucefield
Pringle, Miss M. D.....Hamilton
§Pugsley, F. A.....Toronto
Rankin, Miss H. M., Manitowoc, Wis.
Reid, Miss M. E.....Toronto
*Richardson, Miss S. L. A., Toronto
§Ridley, J. B.....Toronto
Robinson, E. S.....Calgary, Alta.
§Rogers, M. F.....Ottawa
Ross, Miss J. S.....Coniston
§Ross, J. W.....Stratford
Ross, Miss M. R.....Brucefield
§Ryerson, W.....Brantford
Saul, Miss S.....Toronto
Scott, D. A.....Kincardine
Sharpe, H. B. W.....Toronto
§Shaver, E. O.....Toronto
Shulman, Miss E.....Toronto
Silk, Miss P.....Toronto
Simpson, Miss J. I.....Toronto
Sonley, J. A.....Blackwater
Spector, M.....Toronto
Stevenson, Miss J. M.....Toronto
§Stinson, A. R.....Toronto
Stokes, M. L.....Sombra
§Strong, H. J.....Hamilton
Summerhays, R. V.....Paris
Summers, Miss D. M.....Toronto
Sutherland, Miss A. J. F. Toronto
Sutherland, Miss I. E.....Toronto
Tait, M. D. C.....Port Dalhousie
§Tanner, J. E.....Toronto
Tudhope, Miss E.....Orillia
Twiss, E. O.....Dundas
Twohey, Miss E.....Chatham
Underwood, G. B.....Gralton
‡Unwin, G. H.....Guelph
§Urquhart, R. W. I.....Wolseley, Sask.
§West, R. B.....Toronto
Williamson, Miss M. E.....Toronto
Young, Miss O. M.....Toronto

Fourth Year.

Anderson, Miss I. M., Port Dover
Anderson, Miss M. P.....Toronto
§Backus, H. S.....Wallacetown
Black, Miss J. E.....Toronto
§Blakeley, A. W.....Toronto
§Blue, A. W.....Dutton
Brady, A.....Toronto
Brodie, Miss G. A.....Toronto
Brown, Miss G. E.....St. Thomas
Brown, Miss G. H.....Meadowvale
Buchanan, Miss P.....Toronto
Burgess, Miss M.....Toronto
Clayson, Miss M. A.....Toronto
Cockburn, Miss G. E.....Ottawa
Cook, Miss M.....Meaford
Cook, Miss M. E.....Sarnia
Cooper, Miss M. M.....Toronto
Craig, Miss M. H.....Ottawa
Crawford, Miss W. R.....Essex
Day, Miss H. G.....Toronto
Downey, C. C.....Toronto
Elliott, Miss A. C.....Port Hope
‡Ferguson, Miss B.....Toronto
Floody, Miss L. M.....Haileybury

Flumerfelt, Miss A. B.....Toronto
Fraser, Miss M. S.....Hamilton
Fry, Miss M. C.....Dunnville
Gairns, Miss S.....Toronto
Gledhill, T. L.....Kincardine
Goldstick, Miss J.....Toronto
Graham, Miss J. C.....Galt
Grant, I. E.....(Ob.)
Greenbaum, A.....Toronto
Grierson, Miss E. M.....Toronto
Hahn, Miss F. C.....Myrtle
Hall, E. O.....South Oshawa
Hanna, Miss J. S.....Toronto
Harris, Miss E.....Toronto
Harrison, Miss R. A.....Uxbridge
Harvey, Miss M. L.....Hamilton
Harvie, Miss A. B.....Coldwater
Harvie, Miss M. K.....Orillia
Hodgins, Miss M. I.....London
Hoffmann, Miss H. H.....Toronto
Home, Miss M.....Welland
Hunter, Miss B. V. M., West Hill
Irving, Miss A. C.,
Cape Traverse, P.E.I.
Irwin, Miss A. H.....Galt
Irwin, Miss E. C.....Galt
James, Miss M. L.....Hamilton
Keachie, F. B.....Galt
Keyfitz, I.....Toronto
Leim, A. H.....Fergus
§Lewis, E. O.....Toronto
§Luke, C. M.....Tillsonburg
McCoy, Miss M. H.....Toronto
McCrimmon, Miss M. F...Whitby
McCullough, D. J.....Toronto
McDonald, R. W.....Sarnia
McFaul, Miss D. V..Collingwood
McGill, Miss G.....Toronto
McHenry, Miss A. D.....Toronto
MacKey, Miss M. I.....Thornbury
Macnab, G. E.....Orillia
Martin, Miss E. F. D.....Toronto
§Matchett, V. O.....Toronto
Middleton, J. G.....Toronto
Millen, Miss N. L.....Toronto
§Moore, A. M.....Newburgh
Mowry, Miss V. I.....Toronto
§Mulholland, D. B.....Toronto
Mungovan, T. M.....Toronto
Munro, Miss A. M., Seattle, Wash.
Munro, D. C.....Port Elgin
Murray, W. A.....Toronto
*Orr, Miss F. I.....Windsor
Park, Miss R. M.....Toronto
Parsons, Miss D. L.....Sarnia
Peene, Miss A. V. H.....Hamilton
Peterkin, Miss M. C.....Toronto
Potvliet, Miss J. J.....Chatham
§Prendergast, D. J.....Toronto
Primrose, Miss G.....Havelock
Purcell, A. D.....North Bay
Quinn, Miss E. L.....Kincardine
Ramsay, Miss M. F.....Toronto
*Ratcliffe, J. H.....Atwood
§Robins, J. J.....Coldwater
Rotenberg, C.....Toronto
Rotstein, M.....Toronto
Rowan, Miss J. C.....Toronto
Scherk, Miss A. C.....Toronto
Simpson, A.....Toronto
Simpson, Miss P.....Hamilton
Smart, Miss M. W.....Kingston
Smith, A. C. S.....Beeton
Smith, Miss D. E.....Toronto
Smith, Miss M. C...North Bay
Smith, P. V.....Atwood
Spence, Miss A.....Southampton
Stapells, H. G.....Toronto
Stephens, Miss M. M.,
Bowmanville
§Stone, R. S.....Chatham
Strong, Miss R. M.....Hamilton
Tennant, Miss M...Victoria, B.C.
Thompson, Miss W. I.....Toronto
Tolmie, Miss M. G.....Windsor
Underwood, Miss M. L...Toronto
Waldon, Miss F. F.....Hamilton
Walls, Miss M. E.....Keewatin
Walters, Miss M. E.....Toronto
Weir, C. H.....Port Perry
Wilder, Miss M. E.....Toronto
Wilson, J. S.....Elora
Wilson, Miss L. G.....Toronto
§Woodhouse, A. S. P.....Toronto
Wright, Miss I. V.....Toronto
Wright, Miss J. K...Rockford, Ill.

Occasionals.

Atkinson, D. G...Belfast, Ireland
Baillie, Miss G. S. T.....Toronto
Baldwin, Miss A. M.....King
Barlow, W.....Welland Junctn.
*Base, J. S.....Norwich, Eng.
Clark, Miss M. L.....Toronto
Dudley, H. G.....Toronto
Flynn, F. J.....St. Catharines
*Fotheringham, Miss C. H.,
Toronto
§Francis, R.....Toronto
Geoghegan, J. H.....Listowel

Gillman, E.....Toronto
Gurd, Miss J. W.....Tulsa, Okla.
Harrower, J., Blackridge, Scotland
Howard, Miss L. A.....Toronto
Lawson, P. H.....London
Lea, C. W.....Toronto
Lloyd, Miss E. I.....Toronto
MacKay, Miss O. P.,..Woodstock
MacRitchie, K. A.....Toronto
Marshall, G.....Puslinch
Melvin, Mrs. K. W.....Toronto
Murray, J. G.....Toronto
Orr, M. D.....Toronto
Pogson, J. H.....Toronto
†§Rosborough, H. C.,
Lisburnie, Ire.
Ross, D. L.....Erindale
Ryrie, Miss M.....Toronto
Smith, Miss L. C.....Toronto
Sunter, W. G.....Toronto
*Tingey, C. H.....Toronto
Wright, E. P., Sound Beach, Conn.
Zeidman, M.,
Chenstochowa, Russia

VICTORIA COLLEGE.

First Year.

Allin, S. J.....Ilderton
Ashbourne, E. G.,
Twillingate, Nfld.
Avery, C. L.....Toronto
§Baker, C. C.....Ottawa
Baycroft, Miss H. M.....Aurora
Bell, H. J.....Peterboro
Bennett, Miss K. E.,
Swift Current, Sask.
Benson, R. E.....Belleville
Bentham, Miss R. F.....Burketon
Brewer, F. W.....Glanford Sta'n
Brewster, Miss M. W.,..Brantford
§Bunt, F. A.....Collingwood
Burrows, Miss K. F.....Seaforth
Bushnell, E. L.....Omemee
Clare, Miss M. E.....Orono
§Colley, A. K.....Toronto
Couch, J. H.....Quebec, Que.
Cox, Miss G. E.....Leamington
Cox, Miss V. M.....Leamington
Craig, Miss M.....North Gower
Cummings, R. C.....Toronto
Daly, Miss K. B.....Napanee
Davidge, G. L.....Weston
Davidge, P. I.....Weston
Dickson, Miss J. E.,
Winnipeg, Man.
Drew, Miss K.,
New Westminster, B.C.
Elliott, Miss G. I.....Preston
Emberson, Miss D. M.....Weston
Evans, Miss H. P.....Sudbury
Everson, Miss M. A.....Oshawa
Fairfield, A. B.....Beamsville
Fallis, Miss F. A.....Calgary, Alta.
Fitzpatrick, Miss B. M...Belmont
Forman, J. H.....Kirkfield
§Gibson, D. F.....Tillsonburg
Graham, Miss G. H.....Stratford
Graham, T. C. G.....Inglewood
Grainger, Miss E. I.....Toronto
Hanna, Miss M. I.....Toronto
Harries, I. C.....Toronto
§Harston, J. C.....Toronto
Henry, W. C.....Markdale
Hilborn, H. W.....Blair
Hobbs, Miss J. E.....Thorndale
Hogarth, Miss M. V.....Hamilton
Hollinrake, H. A.....Hamilton
Horwood, E. C.....Toronto
§Justin, F. J.....Brampton
Keffer, F. R.....Hespeler
Kelly, G. C.....Hamilton
Lake, Miss S. B.....Toronto
Lee, Miss D. M.,
New Westminster, B.C.
McAndrew, H. O.....Hamilton
McClenaghan, Miss J. V...Ottawa
McMullen, A. W.....Toronto
McMullen, R. E.....Toronto
Menzies, A. E. A.....Sarnia
Merrick, Miss M. P.....Toronto
Metzler, Miss G. E.....Napanee
Millar, Miss D. E.....Thorold
Milliken, Miss R. M.,
Regina, Sask.
§Mullett, C. L.....Orillia
Nourse, R. E.....Downsview
Oaks, Miss M. B.....Preston
Patterson, Miss E. F.,
Niagara Falls
Potter, H. F.....Bayfield
Prentice, G. T.....Collingwood
Ray, Miss M. V.....Woodville
Rehder, Miss A. K.....Paris
Rogers, S.....Tamworth
Sayles, F. A.....Brantford
Schaefer, Miss D. E.....Elmira
Seeley, Miss F. A...Moncton, N.B.
Smart, Miss F. P.....Collingwood
Stewart, Miss N. H.....Toronto
Stillman, W. E.....Ladner, B.C.
Strangway, W. E.....Petrolia
Taylor, F. H.....Toronto
Timmins, W. W.....Toronto
Treleaven, R. L.....Ripley
Uren, Miss A. M.....Kincardine
Van Allen, Miss B. G...Morrisburg
Wallis, Miss G. E.....Clinton
Walton, Miss M. B., Parry Sound
Wilson, Miss M. M.....Toronto
Wright, Miss A. M.....Toronto
Wynne-Roberts, O. L.....Toronto

Second Year.

Agar, Miss L. E.....Toronto
§Allen, R. O.....Toronto
Annis, A. F.....Tyrone
Armstrong, Miss S. G., Markdale
Ayearst, M. J.....Toronto
Baine, F. J.....Toronto

§Baker, L. L.....Toronto
Balfour, Miss I. K.....Toronto
Broughton, T. R. S.....Corbitton
Butcher, Miss E. M.....Toronto
Cameron, Miss J. D.....Welland
Chappell, Miss M. J.,
Tokyo, Japan.
§Clark, N. S.....Toronto
Colbeck, Miss E. D.....Toronto
§Coles, E. J. L.....Woodstock
Cox, Miss T. M.....Leamington
Dafoe, Miss E. C.....Madoc
Dales, Miss W. M.....Drayton
Davidson, Miss J. G.,
Regina, Sask.
Davis, Miss M. E., St. John's, Nfld.
Denton, Miss R.....Toronto
Dewey, Miss H. J.....St. Mary's
Dickinson, C. H.....St. Mary's
Duggan, D. W.....Brampton
Elliott, Miss M. L.....Norwood
Follick, Miss L. M.....Port Perry
Golding, Miss H. R....Brampton
Goulding, Miss M. L.....Weston
Graydon, W. J. G.....Brampton
Greene, Miss M. E.....Ottawa
Grudeff, J.....Toronto
Hall, E. R.....Guelph
Hames, C. F. W.....Beeton
Hassard, Miss G. G.....Toronto
Hubbell, Miss R. A., Smith's Falls
Irwin, Miss H. M.,
Winnipeg, Man.
Keenleyside, Miss N. J. D.,
Regina, Sask.
Lawson, Miss M. R..Chesterville
§Linton, J. G. H.....Bright
McGregor, Miss L. N..Waterdown
McKenzie, D. W.....Toronto
McLaughlin, Miss E. M...Toronto
McVitty, G. C.....Toronto
Marshall, Miss M. E. St. Mary's
Murgatroyd, F. R.....Smithville
Neff, Miss E. U.....Toronto
Noble, W. G.....Leamington
Oaten, B. W. L.....Toronto
Patterson, W. R.....Toronto
§Pearson, V. P.....Guelph
Powell, C. E.....Lucan
Powell, H. W.....Ottawa
Powers, Miss M. H. R....Toronto
Rodman, Miss F. E.....Toronto
Rossiter, Miss J. E.,
Sault Ste. Marie
Rutherford, Miss G. L. Brampton
Ryan, Miss E. M.....Oakville
‡Scarrow, Miss A. V.....Toronto
Smith, H. A.....Peterboro
Smith, R. G.....Hickson
Strong, Miss F. M.....Toronto
Tane, W. F.....Oshawa
Taylor, Miss J. A....Owen Sound
§Unger, D. B.....St. Williams
Uren, Miss M. F.....Toronto
Wallen, Miss E. J.....Unionville
§Westman, A. E. R.....Ottawa
Whittaker, W. W.....Guelph
Williams, Miss E. M.....Toronto
Williams, Miss F. V.....Athens
Wismer, K. L.....Humberstone
Wyllie, Miss E. P.....(Ob.)
York, Miss J. E.....Aurora

Third Year.

Austin, J. W.....Renfrew
§Bates, D. W.....Dundas
Bates, H. C.....Dundas
§Bowes, H. E.....Ingersoll
Brown, Miss A. M., Calgary, Alta.
Burton, Miss O. W.....Warwick
Burwash, Miss G.....Haileybury
Bush, J. D. N.....Morrisburg
§Calder, R. C.....Grimsby
Carley, Miss H. M.....Windsor
Coatsworth, Miss H. R...Toronto
Davison, Miss R. B.....Picton
Dean, Miss C. R.....Toronto
Deas, Miss J.....Toronto
Deeves, Miss M.....Brampton
Dougall, Miss M. F.....Hamilton
Edgington, Miss M. J. K.,
Woodstock
Evans, Miss M. F.....Toronto
Fellows, Miss R. S..Quebec, Que.
Fisher, Miss E. M.....Burlington
Fisher, Miss H. E.....Toronto
Gardiner, Miss M. E.....Toronto
§Geiger, R. M.....Zurich
Goldhang, D. C.....Hamilton
Gordon, W. M.....Owen Sound
Green, Miss L. G.....Windsor
Greene, Miss E. A.....Thornton
Hanna, J. E.....(Ob.)
§Harris, C. W.....Toronto
Harvey, Miss M. I.....Peterboro
Higgins, Miss M. B.....London
Hilliard, Miss F. R...Morrisburg
Horning, Miss E. F.....Cobourg
Horwood, R. B.....Toronto
Hosking, R. S.....Thamesford

Howard, Miss R. L., Moose Jaw, Sask.
Howarth, Miss I. N.....Toronto
Howitt, Miss M.....Almonte
Hutt, Miss J. I.....Guelph
†Jenner, Miss A. D.....Kingsville
Johnston, W. V.....Auburn
Kerr, Miss J. A.....Cobourg
§Kerr, J. E.....Toronto
Kilborn, Miss C. A., Chengtu, China
Kirke, Miss H. T.....Woodstock
Lang, H. D.....St. Mary's
§Langford, H. D.....Toronto
McCamus, Miss M. K...Blenheim
McKinney, E. H.....Norval
McLaren, Miss L. M., Port Elgin
§Maclean, D.....Regina, Sask.
Marshall, Miss M. L...Brantford
Meredith, Miss G. M...Peterboro
§Moss, W. H.....Thorndale
Mutart, L. C.....Niagara Falls
Noseworthy, J. W., Lewisporte, Nfld.
Oaten, Miss B. E.....Toronto
Peever, Miss A. M.....London
Ratz, Miss R. E.....Elmira
Raymer, Miss E.....Mount Joy
Schell, Miss M. M.....Toronto
‡Shepley, Miss J. E...Amherstburg
Sheridan, Miss E. G...Brockville
Smith, Miss L. E.....Toronto
Smith, W. C.....Woodville
Snider, Miss F. E.....St. Jacob's
Stanley, Miss L. H.....Lucan
Sterling, Miss E.....Trowbridge
§Switzer, W. A. W.....Science Hill
Thompson, Miss M. E., Loreburn, Sask.
Thompson, Miss M. H., Georgetown
§Thompson, R. G.....Stirling
Thornton, Miss E. M..Woodstock
§Walmsley, L. C.....Milford
Weston, Miss A. P.....Toronto
Wood, Miss R. L. E...St. George
Wright, H. M.....Charing Cros

Fourth Year.

Bawden, Miss E. D.....London
Bouck, W. H.....Iroquois
Brown, Miss I. L.....Lakefield
Brown, Miss M. A.....Peterboro
Carthy, Miss H. E.....Toronto
Conover, Miss M. L...Brampton
Cross, Miss F. H., Vankleek Hill
Denton, G. C.....Toronto
Dowson, Miss E. L.....Toronto
Dunlop, Miss A. F.... Pakenham
Evans, Miss N. M. S.....Toronto
Fife, Miss G. M.....Peterboro
Gibbard, Miss E., Moose Jaw, Sask.
Giles, Miss I. B.....Peterboro
Graham, Miss A. M....Inglewood
Gundy, Miss M. K.....Windsor
Harvey, L. C.....Exeter
§Heywood, P. K.....Toronto
Hunt, Miss H. H...Calgary, Alta.
Jennings, F. C.....Toronto
Jones, Miss G. M. A.....Toronto
Kilborn, Miss C. E., Szechwan, China
§‡Lang, W. W.....Toronto
LeDrew, F.....Toronto
McCulloch, Miss M. V., Port Perry
MacGowan, A.....Guelph
McGugan, Miss J. M., Mount Brydges
Magwood, Miss M. G.....Toronto
Millsap, Miss F. F. ....Avening
Moote, S. A.....Toronto
Myers, Miss M. R...St. Mary's
Odell, Miss J. G.....Cobourg
§Pearson, L. B.....Guelph
Percival, Miss M. A.....Ottawa
Ribey, Miss F. E.....Toronto
Roberts, Miss I. L.....Brampton
Robinson, Miss M. E. L., Stonewall, Man.
Scott, W. G.....Meaford
Shannon, Miss B. L.....Tara
Shaver, W. W.....Iroquois
Shepherd, Miss E. P...Alexandria
Slater, Miss M. W.....Waterdown
Smith, Miss F. A.....Goderich
Smith, Miss F. M...Biggar, Sask.
Smith, Miss J. O., Junghsien, China
Smyth, W. J. H.....Omemee
Snider, Miss A. H.....Waterloo
Stewart, Miss B. H.....Toronto
Stinson, D. M.....Omemee
St. John, Miss K. I.....Toronto
Symons, Miss C.....St. Mary's
Thompson, Miss D. A...Toronto
Tufford, Miss F. J....Beamsville
Wilson, Miss A. B.....Oakville
Wilson, Miss L. M.....Napanee
Wolfraim, H. C.....Castleton

Occasionals.

Barberee, J. P.....Belwood
Blackburn, R. A.....Strathroy
Carscadden, Miss K. E. E....Galt
Carter, Miss R.....Guelph
Caswell, Miss M. F.....Toronto
§Chapin, R. T.....Oshawa
Colling, J. M.....London
Ding, Miss D.....Foochow, China
Emery, Miss M. G.,
Porterville, Cal.
§Finlay, J. M.....St. Thomas
Harrison, Miss M. L.....Madoc
Hewson, Miss M. H.,
Amherst, N.S.
Hunt, A. E.....London
Luckhart, Miss V.....Toronto
Maines, W. J.....Blyth
Martin, Miss C. J.....Rosemont
Mizunuma, Y...Gunmakon, Japan
Parr, M. C.....Melbourne
Ridout, Miss D. G.....Toronto
Sceviour, J. N.....Exploits, Nfld.

TRINITY COLLEGE.

First Year.

Abbott, H. J. E., Bound Brook, N.J.
Ambrose, A. L.....Hamilton
Briscoe, Miss M. M.....Galt
Buck, Miss M. L.....Brantford
Burpee, Miss R. M.....Ottawa
Burwash, Miss F. M.....Arnprior
*deFreitas, Miss I., Georgetown, B.W.I.
Dewdney, D. R.....Toronto
Dwelly, R. T. C.....Toronto
Ewart, Miss M. B.....Ottawa
Ferguson, Miss J. E...Pt. Stanley
Garner, Miss M. M.....Glencoe
Gee, A. H.....Mt. Hamilton
Gladman, Miss E. G...Peterboro
Gosling, A. C. N., St. Johns, Nfld.
‡Graham, H.....Toronto
Grant, Miss H. G.....Ottawa
Izzard, Miss E. W.....Woodstock
Jameson, A. E.....St. Mary's
§Ketchum, H. F.....Toronto
§*King, J. B.....Kincardine
§Lawrence, W. H. R.....Toronto
Lindsay, Miss A. M. V., North Bay
Luckham, Miss L. M.....Glencoe
Luxton, W. G.....Mt. Forest
McGonigle, Miss E. M., Newmarket
Mason, Miss A. C.....Peterboro
§Mason, F. H.....Brockville
Morse, Miss M. S.....Toronto
Nation, J. S. D.....Toronto
Pittman, Miss B..St. John's, Nfld.
Potts, Miss G. H.....Lindsay
Smith, Miss D. E.....St. Thomas
Stanley, S. W.....Guelph
Stowe, H. J.....Toronto
Sutherland, J. T.....Almonte
Williams, M. G. B.....Havelock
Wilson, H. A.....Toronto

Second Year.

Coulson, Miss N. I.....Brantford
Davidson, J. F.....Peterboro
†Dixon, Miss E. F.....Brantford
Galt, Miss M. C.....Goderich
Gault, T. S.....Deseronto
Gossage, C. D.....Toronto
Humphries, Miss J. B....Glencoe
Lucas, G. H.....Markdale
§Martin, J. J.....Milton
Nevill, Miss R. M....Bartonville
Patterson, A. S.....Hamilton
Phillips, C. E.....Toronto
Pridham, Miss E.....Goderich
Saunders, Miss M. E....Prospect
Smith, Miss M. L.....Millbrook
§Snelgrove, O. H.....Toronto

Third Year.

Boyd, Miss M. A.....Bobcaygeon
§Charlesworth, J. L.....Guelph
Clark, A. C.....Toronto
Crossley, Miss V.....Oakville
Dawson, P. W.....Melford, Sask.
§Hays, R. C.....Goderich
Lowe, P.....Toronto
§Martin, D. A. C.....Hamilton
Scott, Miss W. F.....Brampton
§Scudamore, H. B.....Chippawa

Fourth Year.

Boggs, G. H.....Cobourg
Burwash, Miss A. H.....Arnprior
Chaffe, Miss C. C.....Waterdown
Elliott, Miss E. V., Carleton Place
Elliott, Miss L....Carleton Place
Garrow, Miss A.....Chesterville
Lennard, Miss J. F.....Dundas
Lovell, R. L.....Toronto
Prisley, Miss G. V. D....Toronto
Smith, Miss H. I.....Windsor
Tom, Miss M. I.....Goderich
Turner, Miss B. M. S...Millbrook
§‡West, J. B.....Ottawa
Whittier, Miss D. E.....Trenton
Willis, E. F.....Boissevain, Man.
Winter, Miss M. H.....Ottawa

Occasionals.

Colgate, W. G.....Toronto
Heard H. H.....Thessalon
Martin, C. A.....Milton West
Oakley, Miss M.....Toronto

ST. MICHAEL'S COLLEGE.

First Year.

Allan, Miss P. M.....Picton
Bart, P. J.....Toronto
Bellehumeur, T. J., Penetanguishene
Bench, Miss M.....St. Catharines
Brawley, C. J.....Toronto
Burke, Miss H. R.....Toronto
*Bush, Miss M.....Guelph
Collins, Miss W. C., St. Catharines
†Connelly, E. D.....Toronto
Connolly, G..... Brechin
Coughlin, Miss C. E.....Belleville
Coumans, M. J. .....Chepstow
Cray, Miss M.....Guelph
Cronin, Miss H. B.....Toronto
§Dobell, R. J.....Toronto
Doyle, Miss E. S.....Toronto
Driscoll, A. A.....Hamilton
Dunne, V. J.....Ottawa
Dwyer, F. A.....Toronto
Egan, R. V.....Toronto
Ferriss, A. M.....Windsor
Flynn, Miss M. L.....Hespeler
Forner, B. N.....Toronto
Garey, J. L.....Moira, N.Y.
Gibbons, Miss L. M.....Toronto
Gravelle, Miss E.....Toronto
Gray, Miss L.....Toronto
Hannan, Miss M. A.....Toronto
*Holmes, A. J.....Toronto
Howell, A. J.....Toronto
Irvine, Miss S. M.....Toronto
Irvine, W. K.....Toronto
Kelly, M. J.....Toronto
Killen, J. Q.....Peterboro
Lassaline, H. J.....Windsor
Latchford, Miss L.....Toronto
*Lynch, J. J.....Toronto
*McCabe, T. J. ..... Peterboro
McCardle, Miss M.M. ...Linwood
McCarney, W. C.....Peterboro
McDermott, F. T.....Toronto
McDonald, P. J...Little Current
McDonnell, Miss M. P....Toronto
McGee, W. P.....Lucan
McGrath, Miss E., St. Johns, Nfld.
Mackintosh, Miss E. N...Toronto
Mallon, Miss M. F.....Toronto
Meehan, Miss H. M.....Toronto
Mullett, Miss A. K...Carleton Pl.
Mulligan, T. J.....Sudbury
§Mulvihill, W. L.....Arnprior
Murray, C. A.....Wilton Grove
Nash, A. J. W.....Hamilton
O'Brien, A. D.....Toronto
*O'Connell, D. G.....Toronto
O'Donnell, A. L..... Merrickville
O'Donohue, F. E.....Toronto
O'Hara, T. J. L.....Smith's Falls
O'Leary, Miss K. G.....Park Hill
O'Meara, C. D.....Ottawa
O'Reilly, E. A.....Toronto
O'Toole, A..... Peterboro
Potvin, L. J.....Ottawa
Ryan, J.....Toronto
Schenck, Miss W. A., St. Catharines
Servais, F. J.....Port Arthur
§Shanahan, A. M., Penetanguishene
Shannon, T. F.....Oswego, N.Y.
Simpson, Miss A. C., Port McNicholl
Simpson, F. R., Port McNicholl
*Sullivan, W. F.....Toronto
Tierney, T. F.....Jockvale
Tuffy, Miss C.....Toronto
Vale, P.....Toronto
Wilsher, F. G. W.....Toronto
Wood, Miss C.....Toronto

Second Year.

Boehler, G. B.....Toronto
Coghlan, Miss C. V.....Guelph
Collins, F. T.....Toronto
Cronin, Miss M. F.....Toronto
Cummings, Miss M.....Toronto
Daley, Miss M. T.....Toronto
Donnelly, F. G.....Pinkerton
§Dwyer, C. E.....Hamilton
Garland, Miss M.....Toronto
§Gough, R. P.....Toronto
Greene, P. L.....Toronto
§Leacy, A. T.....Pembroke
Lenahan, N.....Durham
McBrady, Miss L.....Toronto
McCabe, J. P. G.....Merrickville
McCormick, Miss S. F....Toronto
McGuire, J. F..... Ennismore
McHenry, W. B.....Toronto

McKeon, W. H.....Hamilton
§McMahon, E. J.....Delhi
Mallon, J. P.....Toronto
Malone, A. J.....Toronto
§Melady, T. S.....Dublin
Moloney, Miss M. F.....Cornwall
Mullett, Miss H. F.,
Carleton Place
O'Brien, Miss F. D.,
New York, N.Y.
O'Connell, Miss K. L.....Toronto
O'Meara, Miss E.....Toronto
Overend, J.....Toronto
Ray, P. J.....Toronto
Rush, E. L.....Toronto
Ryan, Miss M. A.....Toronto
Sheehy, M. T.....Peterboro
Simpson, F. R.....Port McNicholl
†Sullivan, L. D. J.....Hamilton
Walsh, Miss E. M.....Brantford
§Watson, F. T.....Toronto
Wheeler, W. R. H.....Toronto

Third Year.

Agnew, Miss R. M.....Toronto
Conlogue, R. B.....Toronto
Costello, Miss K. J.....Toronto
Cronin, Miss C. D.....Toronto
Dillon, J. P.....Burlington, Texas
Doyle, Miss M.....Toronto
Flannery, W. M.....North Bay
Fraser, G. E. M.....Ottawa
Glavin, J. J.....Toronto
Hodgins, L. J.....Toronto
Kelly, A. J.....Toronto
Keogh, J. L. G.....Toronto
MacKerrow, Miss A.....Toronto
*McNab, F. R.....Toronto
Manley, J. P.....Toronto
O'Brien, J. A.....Hamilton
O'Brien, Miss M. K.....Toronto
Redmond, Miss F. L.....Peterboro
Ronan, Miss F. T.....Toronto
Ryan, J. B.....Hamilton
§Ryan, M. W.....Peterboro
Shea, J. R.....Wellsville, N.Y.
Storey, W. J.....Toronto
Walsh, Miss G. M.....Brantford

Fourth Year.

Allan, Miss M. M.....Hamilton
§Beck, H. J.....Toronto
Daley, Miss F. M.....Toronto
Donnelly, Miss M. M. Pinkerton
Doyle, M. F.....Toronto
Duggan, Miss H. M.....Toronto
Dwyer, P. M.....Toronto
Elston, Miss G.....Peterboro
Foy, Miss E. C.....Toronto
Kelly, W. F.....Toronto
Murphy, Miss N. T.....Toronto
O'Connor, Miss G. P. ..Mimico
Reddin, E. A.....Toronto
Smyth, Miss M. E.....Bolton
Sullivan, O. P.....Orillia
Webster, B. I.....St. Catharines
Whelan, Miss F. J.....Westport
Ziehr, Miss M. T.....Toronto

Occasionals.

Copeland, P. A.....Toronto
James, A. P.....Toronto
Knowlton, C. E.....Toronto
Lowrey, R. E.....Toronto
Mulligan, M. J.....Toronto
Rush, E. W.....Toronto
Simpson, D. D.....Hamilton

THE

CALENDAR

OF THE

University of Toronto

FACULTY OF

APPLIED SCIENCE AND ENGINEERING

1919-1920

UNIVERSITY OF TORONTO PRESS

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FACULTY OF

APPLIED SCIENCE AND ENGINEERING

1919-1920

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1919 CALENDAR 1919

JANUARY

Sun.	. .	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

FEBRUARY

Sun.	. 2	9	16	23	..	
Mon.	. 3	10	17	24	..	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	..	..

MARCH

Sun.	. 2	9	16	23	30	
Mon.	. 3	10	17	24	31	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	29	..

APRIL

Sun.	. .	6	13	20	27	
Mon.	. .	7	14	21	28	
Tues.	. 1	8	15	22	29	
Wed.	. 2	9	16	23	30	
Thur.	. 3	10	17	24	..	
Fri.	. 4	11	18	25	..	
Sat.	. 5	12	19	26	..	

MAY

Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. 2	9	16	23	30	
Sat.	. 3	10	17	24	31	

JUNE

Sun.	. 1	8	15	22	29	
Mon.	. 2	9	16	23	30	
Tues.	. 3	10	17	24	..	
Wed.	. 4	11	18	25	..	
Thur.	. 5	12	19	26	..	
Fri.	. 6	13	20	27	..	
Sat.	. 7	14	21	28	..	

JULY

Sun.	. .	6	13	20	27	
Mon.	. .	7	14	21	28	
Tues.	. 1	8	15	22	29	
Wed.	. 2	9	16	23	30	
Thur.	. 3	10	17	24	31	
Fri.	. 4	11	18	25	..	
Sat.	. 5	12	19	26	..	

AUGUST

Sun.	. 3	10	17	24	31	
Mon.	. 4	11	18	25	..	
Tues.	. 5	12	19	26	..	
Wed.	. 6	13	20	27	..	
Thur.	. 7	14	21	28	..	
Fri.	1	8	15	22	29	..
Sat.	2	9	16	23	30	..

SEPTEMBER

Sun.	. .	7	14	21	28	
Mon.	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	..	
Thur.	. 4	11	18	25	..	
Fri.	. 5	12	19	26	..	
Sat.	. 6	13	20	27	..	

OCTOBER

Sun.	.	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

NOVEMBER

Sun.	. 2	9	16	23	30	
Mon.	. 3	10	17	24	..	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	29	..

DECEMBER

Sun.	. .	7	14	21	28	
Mon.	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	31	
Thur.	. 4	11	18	25	..	
Fri.	. 5	12	19	26	..	
Sat.	. 6	13	20	27	..	

1920 CALENDAR 1920

JANUARY

Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. 2	9	16	23	30	
Sat.	. 3	10	17	24	31	

FEBRUARY

Sun.	. 1	8	15	22	29	
Mon.	. 2	9	16	23	..	
Tues.	. 3	10	17	24	..	
Wed.	. 4	11	18	25	..	
Thur.	. 5	12	19	26	..	
Fri.	. 6	13	20	27	..	
Sat.	. 7	14	21	28	..	

MARCH

Sun.	. .	7	14	21	28	
Mon.	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	31	
Thur.	. 4	11	18	25	..	
Fri.	. 5	12	19	26	..	
Sat.	. 6	13	20	27	..	

APRIL

Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. 2	9	16	23	30	
Sat.	. 3	10	17	24	..	

MAY

Sun.	. 2	9	16	23	30	
Mon.	. 3	10	17	24	31	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	29	..

JUNE

Sun.	. .	6	13	20	27	
Mon.	. .	7	14	21	28	
Tues.	. 1	8	15	22	29	
Wed.	. 2	9	16	23	30	
Thur.	. 3	10	17	24	..	
Fri.	. 4	11	18	25	..	
Sat.	. 5	12	19	26	..	

JULY

Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. 2	9	16	23	30	
Sat.	. 3	10	17	24	31	

AUGUST

Sun.	. 1	8	15	22	29	
Mon.	. 2	9	16	23	30	
Tues.	. 3	10	17	24	31	
Wed.	. 4	11	18	25	..	
Thur.	. 5	12	19	26	..	
Fri.	. 6	13	20	27	..	
Sat.	. 7	14	21	28	..	

SEPTEMBER

Sun.	. .	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	..	
Sat.	. 4	11	18	25	..	

OCTOBER

Sun.	. 3	10	17	24	31	
Mon.	. 4	11	18	25	..	
Tues.	. 5	12	19	26	..	
Wed.	. 6	13	20	27	..	
Thur.	. 7	14	21	28	..	
Fri.	1	8	15	22	29	..
Sat.	2	9	16	23	30	..

NOVEMBER

Sun.	. .	7	14	21	28	
Mon	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	..	
Thur.	. 4	11	18	25	..	
Fri.	. 5	12	19	26	..	
Sat.	. 6	13	20	27	..	

DECEMBER

Sun.	. .	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

CALENDAR 1919-1920.

1919—Sept. 1 Applications for Registration received.
Last day for receiving applications for Supplemental Examinations.
Sept. 25 Supplemental Examinations begin.
29 Meeting of Faculty Council.
Enrolment.
30 First Term begins.
Last day for receiving Vacation Work.
President's address to students at 3 p.m.
Oct. 3 Meeting of Faculty Council.
15 Meeting of Engineering Society.
29 Meeting of Engineering Society.
Nov. 7 Meeting of Faculty Council.
12 Meeting of Engineering Society.
26 Meeting of Engineering Society.
Dec. 5 Meeting of Faculty Council.
10 Meeting of Engineering Society.
19 First Term ends at 12 noon.

1920—Jan. 6 Second Term begins.
Last day for receiving Theses for B.A.Sc.
9 Meeting of Faculty Council.
14 Meeting of Engineering Society.
28 Meeting of Engineering Society.
Feb. 6 Meeting of Faculty Council.
11 Meeting of Engineering Society.
25 Meeting of Engineering Society.
Mar. 5 Meeting of Faculty Council.
10 Meeting of Engineering Society.
12 Annual elections of Engineering Society.
24 Annual Meeting of Engineering Society.
April 1 Meeting of Faculty Council.
2 Good Friday—Building closed.
5 Lectures and practical work close.
9 Annual Examinations begin.
May 2 Meeting of Faculty Council.
June 4 Annual Commencement.

The buildings will be closed on all public holidays and daily at noon during July and August.

University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President.....R. A. FALCONER, LL.D., D.Litt., C.M.G.
Dean of Faculty.....W. HODGSON ELLIS, M.A., M.B.
Secretary of Faculty.....A. T. LAING, B.A.Sc.
Bursar.....F. A. MOURÉ, Esq.

G. R. ANDERSON, M.A. *Associate Professor of Physics.*	74 Isabella Street.
R. W. ANGUS, B.A.Sc., Mem. Am. Soc. M.E. *Professor of Mechanical Engineering.*	42 Howland Ave.
E. G. R. ARDAGH, B.A.Sc., *Assistant Professor of Applied Chemistry.*	Chem. & Mining Bldg.
L. M. ARKLEY, M.Sc., M.E.I.C. *Assistant Professor in Mechanical Engineering.*	61 Indian Rd. Crescent
J. W. BAIN, B.A.Sc., *Professor of Chemical Engineering.*	393 Brunswick Ave. (On war service.)
M. C. BOSWELL, M.A., Ph.D., *Associate Professor of Organic Chemistry.*	University of Toronto.
J. R. COCKBURN, B.A.Sc., A.M.E.I.C. *Associate Professor of Descriptive Geometry.*	100 Walmer Rd.
S. R. CRERAR, B.A.Sc., D.L.S., *Lecturer in Surveying.*	122 Grenadier Rd.
W. HODGSON ELLIS, M.A., M.B., *Professor of Applied Chemistry.*	86 Woodlawn Ave. E.
P. GILLESPIE, M.Sc., C.E., M.E.I.C., *Associate Professor of Applied Mechanics.*	358 Davenport Rd.
G. A. GUESS, M.A., *Professor of Metallurgy.*	Oakville.
H. E. T. HAULTAIN, C.E., M.I.M.M., *Professor of Mining Engineering.*	50 St. George St.
A. T. LAING, B.A.Sc., *Assistant Professor of Applied Mechanics.*	146 Balmoral Ave.
T. R. LOUDON, B.A.Sc., *Assistant Professor of Ferro-Metallurgy.*	189 Sheldrake Blvd.
A. WELLESLEY MCCONNELL, B.A.Sc., *Assistant Professor of Architecture.*	36 Prince Arthur Avenue
J. MCGOWAN, B.A., B.A.Sc., *Professor of Applied Mechanics.*	Engineering Building.

H. W. PRICE, B.A.Sc., 474 Palmerston Ave.
Associate Professor of Electrical Engineering.

T. R. ROSEBRUGH, M.A., 92 Walmer Rd.
Professor of Electrical Engineering.

L. B. STEWART, O.L.S., D.T.S., 161 Admiral Rd.
Professor of Surveying and Geodesy.

J. J. TRAILL, B.A.Sc., 15 Fulton Ave.
Lecturer in Hydraulics.

W. M. TREADGOLD, B.A., 13 Woodlawn Ave. E.
Assistant Professor of Surveying.

C. H. C. WRIGHT, B.A.Sc., Mem. O.A.A., 419 Markham St.
Professor of Architecture.

C. R. YOUNG, B.A.Sc., C.E., M.E.I.C. 98 Hilton Ave.
Assistant Professor of Structural Engineering.

Sessional Appointments.

J. L. BANKS, 176 Kingston Rd.
Instructor in Modelling.

E. W. BANTING, B.A.Sc., 101 Farnham Ave.
Lecturer in Surveying.

J. H. BILLINGS, B.A.Sc., S.M., Assoc. Mem. Am. Soc. M.E., Weston, Ont.
Lecturer in Machine Design.

J. T. BURT-GERRANS, M.A., Phm.B., 46 Dewson St.
Lecturer in Electrochemistry.

A. R. CLUTE, B.A., LL.B., 47 Elgin Ave.
Lecturer on Law of Partnership and Limited Companies.

A. R. DUFF, 211 Fern Ave.
Demonstrator in Applied Chemistry.

F. C. DYER, B.A.Sc., 233 Ashworth Ave.
Lecturer in Mining Engineering.

W S. FERGUSON, C.A., 52 Tranby Ave.
Lecturer in Accountancy.

W. R. FETZER, B.A., 120 Brunswick Ave.
Demonstrator in Electrochemistry.

H. J. FRANKLIN, B.A.Sc., 72 Delaware Ave.
Demonstrator in Drawing.

G. H. HALLY, B.A.Sc., 74 Duggan Ave.
Demonstrator in Mechanical Engineering.

R. W. HARRIS, B.A.Sc., 100 Cowan Ave.
Demonstrator in Drawing.

W. S. GUEST, B.A.Sc., 30 McMaster Ave.
Lecturer in Electrical Engineering.

C. W. JEFFERYS, A.R.C.A., Mem. O.S.A., York Mills
Instructor in Freehand Drawing.

J. T. KING, B.A.Sc., 87 Pine Crest Rd.
Lecturer in Mining Engineering.

MISS J. C. LAING, B.A., 22 Pinewood Ave.
Instructor in French.

H. M. LANCASTER, B.A.Sc., 22 Palmerston Gardens
Instructor in Applied Chemistry.

J. M. LYLE, 19 Avondale Rd.
Instructor in Architectural Design.

H. H. MADILL, B.A.Sc., Mem. O.A.A., 88 Woodlawn Ave. W.
Lecturer in Architecture.

O. MARGISON, B.A.Sc., 62 College St.
Demonstrator in Drawing.

A. S. MATHERS, B.A.Sc., 142 Bloor St. W.
Instructor in Architecture.

J. W. MELSON, B.A.Sc., 69 Walmsley Blvd.
Demonstrator in Strength of Materials and Physics.

J. H. PARKIN, B.A.Sc., 10 Columbine Ave.
Lecturer in Mechanical Engineering.

C. W. RICHARDSON, B.A.Sc., Harcroft Rd.
Instructor in Drawing.

F. SIMPSON, 15 Lakeview Ave.
Instructor in Modelling.

W. J. SMITHER, B.A.Sc., A.M.E.I.C., Pensax Court
Lecturer in Structural Engineering.

A. P. THOMSON, B.A.Sc., 88 Binscarth Rd.
Demonstrator in Drawing.

G. L. WALLACE, B A.Sc., 237 High Park Ave.
Demonstrator in Physics.

F. E. WATSON, B.A.Sc., 447 Manning Ave.
Demonstrator in Drawing.

W. J. T. WRIGHT, B.A.Sc., 419 Markham St.
Demonstrator in Drawing.

A. R. ZIMMER, B.A.Sc., 80 Pine Crest Road
Lecturer in Electrical Engineering.

MEMBERS OF OTHER FACULTIES GIVING INSTRUCTION TO STUDENTS IN APPLIED SCIENCE.

F. B. ALLAN, M.A., Ph.D., *Associate Professor of Organic Chemistry.*	380 Brunswick Ave.
ALFRED BAKER, M.A., LL.D., *Professor of Mathematics.*	81 Madison Ave.
S. BEATTY, Ph.D., *Assistant Professor of Mathematics.*	44 Pinewood Rd.
B. A. BENSLEY, B.A., Ph.D., *Professor of Zoology.*	37 Admiral Rd.
C. A. CHANT, M.A., Ph.D., *Associate Professor of Astro-Physics*	201 Madison Ave.
W. A. CLEMENS, M.A., Ph.D., *Lecturer in Elementary Biology.*	34 Boswell Ave.
A. P. COLEMAN, M.A., Ph.D., *Professor of Geology.*	476 Huron St.
A. T. DELURY, M.A., *Professor of Mathematics.*	University of Toronto
B. FAIRLEY, M.A., Ph.D., *Associate Professor of German.*	21 McMaster Ave.
J. H. FAULL, B.A., Ph.D., *Associate Professor of Botany.*	102 Yorkville Ave.
J. G. FITZGERALD, M.B., *Associate Professor of Hygiene.*	186 Balmoral Ave.
W. J. LOUDON, B.A., *Professor of Mechanics.*	139 Cottingham St.
M. A. MACKENZIE, M.A., F.I.A., *Professor of Mathematics.*	1 Bellwoods Park
W. L. MILLER, B.A., Ph.D., *Professor of Physical Chemistry.*	50 St. Albans St.
G. H. NEEDLER, B.A., Ph.D., (Leipsic) *Professor of German.*	103 Bedford Rd.
W. A. PARKS, B.A., Ph.D., *Professor of Palaeontology.*	69 Albany Ave.
A. L. PARSONS, B.A., *Assistant Professor of Mineralogy.*	47 St. Vincent St.
L. J. ROGERS, B.A.Sc., *Assistant Professor of Analytical Chemistry.*	29 Rosemount Ave.
T. L. WALKER, M.A., Ph.D., *Professor of Mineralogy.*	20 Avondale Ave.
E. M. WALKER, B.A., M.B., *Associate Professor of Biology.*	67 Alcina Ave.
J. S. WILL, B.A., *Professor of French.*	56 Ranleigh Ave.

Sessional Appointments.

H. S. McKELLAR, B.A., *Lecturer in French.*	41 McFarland Ave.
A. MACLEAN, B.A., *Lecturer in Geology.*	102 College St.
I. R. POUNDER, M.A., *Lecturer in Mathematics.*	21 Hazelton Ave.
J. E. THOMSON, B.A.Sc., *Lecturer in Mineralogy.*	57 Queen's Park

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

Historical Sketch.

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

GRADUATING DEPARTMENTS.

There are eight regular Departments of Instruction leading to the degree of Bachelor of Applied Science:—

1 Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.
8. Metallurgical Engineering.

The instruction given in these departments extends over a period of four years and is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such training as may make him immediately useful when he commences professional work.

DEGREE OF MASTER OF APPLIED SCIENCE (M.A.Sc.).

(For requirements, see page 72.)

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem. E.), as the case may be, subject to the rules and regulations established by the University. (See page 72.)

FELLOWSHIPS.

Fellowships of the value of $500 each, open to graduates, are offered annually in the various departments.

Applications for these fellowships are to be made annually in writing to the Secretary of the Faculty on or before the 1st day of May.

SCHOLARSHIPS.

The Boiler Inspection and Insurance Company of Canada offers a Scholarship in the Department of Mechanical Engineering of the value of $130.00 to the student who obtains highest Honour Standing in the regular examinations of the third year.

The successful candidate will be expected to proceed to his fourth year during the session next following the date of the award.

The amount of the award will be credited by the Bursar to the fees of the fourth year of the successful candidate.

The Engineering Alumni Association offers four scholarships of the value of $100.00 each and four of $50.00 each to students registered in the First year in the Faculty of Applied Science and Engineering. The awards in the first instance will be made on the results of a competitive examination which will be held early in October. The subjects of this examination include Mathematics, three papers; Science, two papers; English, two papers. In Mathematics the papers will be based on the work prescribed for Honour Matriculation and in Science on that prescribed for Junior Matriculation. In English the papers will consist of Composition and a test of the candidate's power to understand sight passages.

The scholarships are subject to the following regulations:

1. The scholarships will be divided *pro rata* between candidates who have seen active service in some theatre of the recent war and those who have not, but one $100.00 scholarship, at least, will be reserved for the former class, providing any compete.

2. No candidate will be eligible to compete who has previously taken academic work in any Faculty of any University.

3. The candidate must obtain at least seventy per cent. on the aggregate of the marks obtainable in any year. Pass standing only will be required from active service men for the first year, but thereafter they must meet the same requirements as other successful candidates.

4. The candidate must, in addition to the above requirements, receive, year by year, the recommendation of the head of his department as to his general fitness to merit the award.

5. Failure to meet the above requirements in any one year will cause the forfeiture of the award for that year but will not debar the holder of a scholarship from regaining his standing by meeting the requirements in succeeding years.

6. If the holder of a scholarship fails to pass in any one year or is absent from the University for any cause other than illness, his scholarship will thereafter be wholly forfeited.

MATRICULATION.

1. The matriculation requirements of this Faculty are based upon those given in the curriculum for Junior Matriculation, a copy of which may be obtained on application.

2. A candidate for matriculation must produce satisfactory certificates of good character.

3. The subjects are as follows:

English, History, any three of the following, viz., Greek, Latin, French, German, Experimental Science, with pass standing in Honour Mathematics.

Beginning with the session 1920-1921 matriculation requirements will be as follows:

Part I, Junior Matriculation.

Part II, Honour Mathematics, pass standing in Honour English and in one of the following Honour subjects: Greek, Latin, French, German, Spanish.

In selecting the options it is recommended that students take French, German and Experimental Science. In the department of Architecture French is required and in Chemical Engineering German is required.

4. The pass standard is forty per cent. of the marks assigned to a paper, with an average of sixty per cent.

5. A candidate who has obtained an average of sixty per cent. on all the papers but has failed to obtain forty per cent. in not more than two papers may complete matriculation by passing on these papers at any one subsequent examination.

6. A candidate who has obtained forty per cent. on each of at least eight papers, with an average of sixty per cent. on the same, will be credited with these papers. In order to complete his Matriculation, he must obtain at one subsequent examination forty per cent. on each of the remaining papers, with an average of sixty per cent.

7. The examination for pass and honour Junior Matriculation is held annually in June at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

8. Applications accompanied by the fee of $5.00 must be sent not later than the 15th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

9. A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized. Candidates entitled to the privileges of supplemental examinations, as well as new candidates, may present themselves at this examination.

10. Applications to write on the September examination, together with the necessary fee, must be received at the Department of Education not later than September 1, for those who wish to write at any centre established in Ontario, and not later than August 1 for any centre elsewhere in Canada.

11. Forms of application, the time-table of the September examination, and further particulars may be had upon application to the Department of Education.

ADMISSION.

A candidate for admission must have completed the seventeenth year of his age on or before the first of October of the year in which he seeks to enter.

Applications for admission must be made on blank forms supplied by the Registrar, and should be forwarded early in September.

Applications will be considered from (*a*) those who have completed matriculation, including those who hold certificates recognized as equivalent—see matriculation curriculum—, (*b*) those who have failed in not more than two papers of the matriculation examination. The latter must complete matriculation before being eligible to enter the second year.

Applications based upon other certificates than those mentioned will be considered as occasion may require. Such certificates must be accompanied by an official statement of the marks in the various subjects upon which the certificate was granted.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

REGISTRATION.

Registration in the various years will begin Sept. 1st. Blank cards for the purpose will be supplied by the Secretary on request. (See "Dues and Deposits," next page.)

FEES.

All fees are payable at the Bursar's office between the hours 10 a.m. and 1 p.m. of each week day except Saturday.

The annual fees including tuition, library, laboratory supplies and one annual examination shall be as follows:

First Year.

If paid in full on or before November 5th	$100.00
By instalments:	
First instalment, if paid on or before November 5th	50.00
Second instalment, if paid on or before February 5th	55.00

Second Year.

If paid in full on or before November 5th	$110.00
By instalments:	
First instalment, if paid on or before November 5th	55.00
Second instalment, if paid on or before February 5th	60.00

Third and Fourth Years.

If paid in full on or before November 5th	$120.00
By instalments:	
First instalment, if paid on or before November 5th	60.00
Second instalment, if paid on or before February 5th	65.00

Repeating the Year.

If paid in full on or before November 5th..... $50.00

The above fees are payable in advance. After November 5th a penalty of $1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply.

Students desiring to pay in instalments must have paid the fees due in the first term before proceeding to the work of the second term.

General Fees.

Matriculation, or registration of Matriculation.....	$ 5.00
Supplemental examination.....	10.00
Admission *ad eundem statum*.....	10.00
Degree of B.A.Sc. (payable not later than April 1st).....	10.00
Degree of M.A.Sc.....	25.00

Dues and Deposits.

(Payable to the Secretary of the Faculty at the time of registration.)

Engineering Society membership.....	$2.00
Annual deposit, Departments 1, 3, 4, 7.....	2.00
Departments 2, 5, 6, 8.....	5.00

Charges for waste, neglect and breakage are to be met out of the deposit fee, the balance of which will be refunded to the student at the end of the session.

Students' Council Fee.

The Annual Fee..... $2.00

Every male student in attendance, proceeding to the Degree of Bachelor of Applied Science and Engineering, is required to pay to the Bursar, at the time of the entry of his name with the Secretary, the Annual Fee of two dollars, for the maintenance of the Council of the Undergraduates.

GENERAL INFORMATION FOR STUDENTS.

The Council of University College and the governing bodies of the federated universities and colleges, respectively, have disciplinary jurisdiction over and entire responsibility for the conduct of their students in respect of all matters arising or occurring in or upon their respective college buildings and grounds, including residences.

The councils of such of the faculties as have assigned for their separate use any building or buildings and grounds, including residences, have disciplinary jurisdiction over and entire responsibility for the conduct of all students in their respective faculties in respect of all matters arising or occurring in or upon such building, or buildings and grounds.

In all such cases, and, save as aforesaid, as respects all students to whatsoever college or faculty they may belong, disciplinary jurisdiction is vested in the Caput, but the Caput may delegate its authority in any particular case or by any general regulation to the council or other governing body of the university or college or faculty to which the student belongs.

The Caput has also power and authority to determine by general regulations, or otherwise, to what college, faculty or other body the control of university associations belongs.

If there be any questions as to the proper body to exercise jurisdiction in any matter of discipline which may arise, the same shall be determined by the Caput, whose decision shall be final.

Disciplinary jurisdiction includes the power to impose fines.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles". Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

Any student who may be convicted of having taken part in processions through the city, which have not been authorized by the police authorities after application by the Executive of the Students' Council, will be severely disciplined.

All students shall be in attendance during the whole of each term. Those whose attendance or work is reported as unsatisfactory are liable to dismissal by the Council.

No student will be allowed to repeat the work of any year more than once.

Information as to the text-books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

PHYSICAL TRAINING

By order of the Board of Governors each male student proceeding to a degree must take Physical Training in the first and second years of his attendance. He must first undergo a medical examination by the Physical Director of the University to determine the character of his training.

OPTIONS.

In the fourth year, optional courses are arranged in certain departments. Students are required to submit their selection to the Secretary in writing, not later than September 15th. The proposed selection must be approved by Council before adoption.

REGULATIONS RESPECTING EXAMINATIONS.

Regular Examinations.

A student who in either term of the session fails to perform the work of his course in a manner satisfactory to the professors in charge, will not be allowed to present himself at the final examinations of the year.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the annual examinations in April, notice in writing of their intention to take such examinations. A penalty of $1.00 will be imposed upon all candidates who fail to give notice within the proper time.

In the second, third and fourth years annual examinations will be held at the beginning of the second term on all subjects completed during the first term.

No student will be allowed to write at the annual examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examination will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the annual examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Term Examinations.

In the first year only, term examinations in three subjects will be held on the last two days of the first term.

The subjects will not be announced until the day previous to the first examination.

The results of these examinations will be incorporated with those of the annual examinations in the same subjects in the ratio of 1 to 2.

Supplemental Examinations.

A candidate who fails in one or two subjects at the Annual Examinations will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 25th of September, 1919. Candidates are required to send to the Secretary of the Faculty not later than the first of September, notice in writing of their intention to take such examinations, and to remit to the Bursar the fee of $10.00. A penalty of $1.00 will be imposed upon all candidates who fail to give notice within the time stated.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Vacation Work.

Vacation work must be handed in on or before the first day of the session.

Vacation notes must be on construction only, except in Department 2 (see p. 73), and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be freehand pencil drawings with figured dimensions.

Notes must be made in standard note books approved of by the Faculty. Notes which have been taken during the session in connection with the work in drawing will not count as vacation work.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Shop Work.

Students in Mechanical and Electrical Engineering are not considered as having completed their course of study, nor are degrees granted until certificates have been submitted to the Council, and accepted as satisfactory, showing not less than eight months of mechanical experience in production of some kind under commercial conditions. Preferably the work undertaken should be in one of the manufacturing industries or trades with which the Course is related.

It is not desirable that any student in these Courses should enter sales or other non-production departments of the engineering industries without having acquired some personal experience in mechanical production. It is best to obtain this experience under commercial conditions. Otherwise one can not at all appreciate shop conditions and limitations.

Honours.

Honours will be granted in each department to the students who obtain at least 40 per cent. in each subject, and 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Honour Graduate standing will be granted to those who obtain honours in the final and in one previous year.

REGULATIONS RESPECTING TERM WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings and briefs for same, that are required to be finished the first term of the session will not be counted unless finished in that term.

The minimum number of drawings in first and second years shall be twenty-five, and the maximum number thirty-five.

No drawings or briefs for same will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Theses.

In the Fourth Year each student is required to prepare a thesis on a subject approved by the Council. The title of the thesis must be sent to the Secretary of the Faculty for approval on or before November 1st, and the completed thesis must be handed in not later than the first day of the second term and shall become the property of the University. The rules governing size, form, etc., may be obtained on application to the Secretary.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

COURSES OF INSTRUCTION.

On the following pages the courses of instruction in the various departments are set forth in detail. The time devoted to the various subjects, both for lectures and practical work, is indicated as accurately as possible but is subject to modifications from time to time as occasion seems to require. In the First Year the course is common to all departments except Architecture and Chemical Engineering (courses 4 and 6). In the Second Year the courses in Mechanical and Electrical Engineering (courses 3 and 7) are identical.

1. DEPARTMENT OF CIVIL ENGINEERING.

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field, the drafting room and the laboratory. In this way the student is led to apply the principles developed in the class room.

Civil Engineering—First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	115	1		1	
Surveying	205, 206	1	8	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	
Electricity	135,136	2		2	
Engineering Problems	193	1		1	
Drawing	117		11		20

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Spherical Trigonometry	191	1			
Elementary Astronomy	55	1		1	
Descriptive Geometry	121	1		1	
Surveying	207, 208	1	8	1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Optics	197	1	1½	1	1½
Hydrostatics	196			1	1
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Mineralogy	159, 161	2	1		3
Metallurgy	183			1	
Banking and Finance	66	1		1	
Drawing	123		8		15
Chemical Laboratory	81		3		3

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y
Vacation Work	220				
Least Squares	192			1	
Practical Astronomy and Geodesy	56, 57	2		2	
Surveying and Levelling	209, 210	1	8	1	
Descriptive Geometry	127	1			
Hydraulics	29, 30	2		2	3
Photography	199	1	1½		1½
Ferro-Metallurgy	181	1		1	
Theory of Structures	18	2		2	
Cements and Concrete	21			1	
Engineering Chemistry	94	1		1	
Geology	150	1		1	
Limited Companies	67	1		1	
Heat	198	1	1½		
Strength of Materials	14				2
Drawing	128		6		19

Fourth Year.

†Foundations	20	1	1	1	1
Electricity	140	1		1	
†Thermodynamics	34, 39*a*	1		1	2
Economic Geology	151	1		1	
Contracts and Specifications	68			1	
Thesis	219				
And one of					
(*a*) Astronomy	58, 59	2	23	2	
(*a*) Geodesy	60	2		2	23
(*b*) Sanitary Engineering	213	1½	16	1½	16
(*b*) Highway Engineering	214	1	6	1	6
(*c*) Structural Engineering	215	6	22	7	22
(*d*) Strength of Materials with either :	16, 17, 22, 23	3½	11	3½	11
(1) Hydraulics	31, 31*a*, 32	3	10	3	10
or					
(2) Railway Engineering	211, 212	2	11	2	11

† Not required of those taking the Astronomy option.

2. DEPARTMENT OF MINING ENGINEERING.

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practise the art of mining or metallurgy. In the second year it differs very little from the course in civil engineering, in the third year some subjects peculiar to mining and metallurgy are taken up.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches, such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least six months' practical experience in work connected with mining, metallurgy or geology, for which they must have received regular wages. Certificate forms, giving full details as to acceptable classes of work, will be furnished on application, and should be obtained by all students before entering employment.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	115	1		1	
Surveying	205, 206	1	8	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	
Electricity	135, 136	2		2	
Engineering Problems	193	1		1	
Drawing	117		11		20

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Surveying	207, 208	1	9	1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Optics	197	1	1½	1	1½
Hydrostatics	196			1	1
Inorganic Chemistry	79	1			
Organic Chemistry	87	1			
Engineering Chemistry	85			1	
Mineralogy	157, 160	2	1		3
Geology	150	1		1	
Mining	170, 171	1	3		
Metallurgy	183			1	
Banking and Finance	66	1		1	
Drawing	123		3		14
Chemical Laboratory	81, 82		3		3

Mining Engineering—Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Surveying and Levelling	209, 210	1	8		
Theory of Structures	19	2			
Hydraulics	29*a*	2		2	
Electricity	140	1		1	
Engineering Chemistry	94	1		1	
Analytical Chemistry	80	1		1	
Assaying	173	1	3		3
Petrography	163	1		1	
Mineralogy	164		2		2
Economic Geology	151, 156	1		2	2
Ore Deposits	155	1		1	
Mining	172			2	3
Ore Dressing	177	1		1	
Ferro-Metallurgy	181	1		1	
Metallurgy	184	1		1	
Limited Companies	67	1		1	
Drawing	132		7		2
Chemical Laboratory	93				11

Fourth Year.

Thermodynamics	34	1		1	
Electrochemistry	101	2			
Assaying	174			1	3
Petrography	165, 166	1	2	1	2
Geology, Archaean and Glacial	152	2	1	2	
Geology, Mining	153	1		1	
Mining	175	1		1	
Ore Dressing	179	1		1	
Metallurgy	180, 182	1		1	5
Cost-keeping, etc	70	1		1	
Milling	176				5
Power	32*a*, 39*a*, 141		3		2
Design	215		3		3
Chemical Laboratory	112		10		
Thesis	219		6		2

3. DEPARTMENT OF MECHANICAL ENGINEERING.

The course in this Department is designed to meet the needs of those students who are intending to take up the work connected with Mechanical Engineering, such as the design of gas engines, steam engines, steam boilers, steam turbines, air compressors, etc.; the design and installation of the machinery connected with power plants and central stations, steam piping and other similar problems. The work is also so arranged that the student becomes somewhat familiar with the design of travelling cranes and mill buildings and similar problems connected with structural steel work.

Since the work of the mechanical engineer and of the electrical engineer is closely allied, the courses in these two departments in the first two years are identical and cover the subjects mentioned below.

In the third year the work becomes more specialized, the mechanical engineers paying more attention to heat engines of various types, and to mill building design and other work of similar nature. The study of electricity is continued and the student gets considerable practice in the mechanical and electrical laboratories.

In the fourth year the student devotes himself still more closely to his chosen work, placing the greater stress on thermodynamics and the theory and testing of heat engines, and problems in machine design. Much time is spent in the mechanical laboratories testing gas and steam engines and other machines.

Before receiving the degree in this department candidates are required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Mechanical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering, as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

Mechanical Engineering—First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	115	1		1	
Surveying	205, 206	1	8	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	
Electricity	135, 136	2		2	
Engineering Problems	193	1		1	
Drawing	117		11		20

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Dynamics	12	1		1	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Strength of Materials	13	2		2	
Optics	197	1	1½	1	1½
Hydrostatics	196			1	1
Electricity	138, 139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Banking and Finance	66	1		1	
Drawing	123		13		11
Chemical Laboratory	81		3		3
Machine Tools	28*a*			1	

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Mechanics of Machinery	26	1		1	
Machine Design	27	2	6½	2	6½
Thermodynamics	33, 35	2	2	2	2
Heat Engines	39	1		1	
Hydraulics	29, 30	2		2	1
Theory of Structures	19	2			
Ferro-Metallurgy	181	1		1	
Magnetism and Electricity	144, 142	2	3½	2	3½
Alternating Current	143	1		1	
Engineering Chemistry	94	1		1	
Limited Companies	67	1		1	
Strength of Materials	14		2		
Drawing	132		8		

Fourth Year.

Mill Building Design	24	1	3	1	3
Cost-keeping, etc	69	1		1	
Machine Design	28	1	4	1	4
Thesis	219				
And two of					
(*d*) Hydraulics	31, 31*a*, 32	3	9	3	9
(*e*) Strength of Materials	16, 17, 22, 23	3½	10	3½	10
(*g*) Thermodynamics	36, 36*a*, 37	3	10	3	10

4. DEPARTMENT OF ARCHITECTURE

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the aesthetic and scientific needs of the profession, and includes History and Principles of Architecture, Free-hand Drawing in pencil, ink and color, Modelling, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

First Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Analytical Geometry	188	1		2	
Descriptive Geometry	116	1		1	
Building Measurement	52	1	9	1	
Statics	10	2		2	
Elementary Chemistry	75	2		2	
History and Principles of Architecture	40	1	3	1	
French	217	1		1	
Accounts	65	1		1	
Drawing	118		9		18
Freehand Drawing	49		2		2
Modelling	50		2		2

Second Year

Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	122	1		1	
Strength of Materials	13	2		2	
Optics and Lighting	197*a*	1	1½		
Illumination	200			1	1½
Architectural Design	46	1		1	
History of Architecture	41	1		1	

Second Year—Continued.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Orders of Architecture	45	1		1	
History of Ornament	43	1		1	
French	217	1		1	
Banking and Finance	66	1		1	
Drawing Architectural Design Freehand Drawing	125 49*a*		17 2		17 2
Modelling	50*a*		2		2
Third Year.					
Vacation Work	220				
Descriptive Geometry	131				
Acoustics	195	1	1½		
History of Architecture	42	1		1	
History and Principles of Ornament	44	1		1	
Architectural Design	47	1		1	
Building Materials	53	2		2	
Theory of Structures	19	2			
Cements and Concrete	21			1	
Limited Companies	67	1		1	
Strength of Materials	14				2
Photography	199	1	1½		1½
Modelling	50*b*		2		2
Water Color Painting	49*b*		2		2
Drawing Architectural Design	130		7 6		22
Fourth Year.					
Strength of Materials	22	1		1	6
Structural Design	51	1	1	1	1
Electricity	140	1		1	
Heating and Ventilating	54*a*	1		1	
Sanitary Science	54	1		1	
Contracts and Specifications	68			1	
Thesis	219		3		3
Drawing from life	49*c*		2		2
Modelling from life	50*c*		2		2
And one of					
(*l*) Architectural Design	48	2	17	2	17
(*m*) Architectural Engineering	216	4	19	3	23

5. DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practise chemistry as a profession, either as analysts or as works chemists.

(No new students are being accepted for this course, and in 1921 it will cease to exist.)

SUBJECTS OF INSTRUCTION.

Third Year.

Subject	No.	Hours per week. First Term. Lect.		Second Term Lect.	Lab'y.
Electrochemistry	101, 102	2	3		
Engineering Chemistry	94	1		1	
Industrial Chemistry	95	1		1	
Organic Chemistry A	97	2		2	
Organic Chemistry B	98			1	
Chemical Plant	96	1		1	
Ferro-Metallurgy	181	1		1	
Metallurgy	184	1		1	
Economic Geology	151	2		2	
Crystallography	167	1		1	
Limited Companies	67	1		1	
German	218	1		1	
Chemical Laboratory	91		13		17
Assaying	173		1½		1½
Heat	198	1	1½		
Electricity	140			1	

Fourth Year.

Inorganic Chemistry	103	1	3	1	
Organic Chemistry	104	1	15	1	
Cost-keeping, etc.	69	1		1	
German	218	1		1	
Thesis	219				
And one of					
(*h*) Electrochemistry	108, 109	2	11	2	29
(*i*) Industrial Chemistry	106, 107	1	12	1	30
(*j*) Sanitary and Forensic Chemistry and Bacteriology	64, 110, 1111		12	2	29
(*k*) Metallurgy	1802		11	1	30

6. DEPARTMENT OF CHEMICAL ENGINEERING.

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course in Chemical Engineering is designed.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term.	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	115	1		1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75, 78	2	12	2	12
Mineralogy Laboratory	158				3
Electricity	135, 136	2		2	
Biology Laboratory	62	3		3	
Engineering Problems	193	1		1	
Drawing	117		3		3

Second Year.

Vacation Work	220				
Calculus	190	2		2	
Strength of Materials	13	2		2	
Electricity	138, 139	2	2½	2	2½
Engineering Chemistry	85			1	
Industrial Chemistry	86	1		1	
Organic Chemistry	88	2		2	
Physical Chemistry	90	2		2	
Inorganic Chemistry	79	1			
Optics	197	1	1½	1	1½
Hydrostatics	196			1	1
German	218	1		1	
Banking and Finance	66	1		1	
Drawing	123		6		6
Chemical Laboratory	84		10		10
Metallurgy	183			1	
Machine Tools	28*a*			1	

Third Year.

Subject	No.	Hours per week.			
		First Term		Second Term.	
		Lect.	Lab'y.	Lect.	Lab'y.
Vacation Work	220				
Theory of Structures	19	2			
Thermodynamics	33, 35	2	2	2	1½
Electrochemistry	101, 102	2	3		
Engineering Chemistry	94	1		1	
Organic Chemistry A	97	2		2	
Organic Chemistry B	98			1	
Industrial Chemistry	95	1		1	
Analytical Chemistry	80	1		1	
Metallurgy	184	1		1	
Ferro-Metallurgy	181	1		1	
Chemical Plant	96	1		1	
Limited Companies	67	1		1	
German	218	1		1	
Machine Design	27	2	3½	2	3½
Assaying	173		1½		1½
Electricity	140			1	
Drawing	132		3		
Chemical Laboratory	92		8		11

Fourth Year.

Hydraulics	29*a*	2		2	
Inorganic Chemistry	103	1	3	2	
Organic Chemistry	104	1	13	1	
Cost-keeping, etc	69	1		1	
Power	32*a*, 141		2		2
German	218	1		1	
Thesis	219				
And one of					
(*h*) Electrochemistry	108	2	9	2	24
(*i*) Industrial Chemistry	106, 107	1	10	1	25
(*j*) Sanitary and Forensic Chemistry and Bacteriology	64, 110, 112	1	10	2	24
(*k*) Metallurgy	180	1	10	1	25

7. DEPARTMENT OF ELECTRICAL ENGINEERING.

The course in Electrical Engineering is arranged to provide preliminary training for those who would follow any of the various lines of activity connected with electrical industry.

The first two years of the course are devoted to fundamental scientific principles, and incidentally more or less of their application to engineering problems in mechanical, civil and electrical work. Many problems are solved in the drafting rooms by graphical methods. The third year includes further theoretical work, more particular attention being given to electrical and mechanical studies in theory, operation and design. The fourth year is devoted to advanced work in alternating current theory and practice combined with similar study in thermodynamics, hydraulics or electrochemistry.

A large amount of laboratory practice is provided, most of which belongs to the third and fourth years. In this last year most of the time is spent in laboratory investigations and studies resulting therefrom.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' mechanical experience in one of the principal trades connected with Electrical Engineering, the object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

First Year.

Subject	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	115	1		1	
Surveying	205, 206	1	8	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	
Electricity	135, 136	2		2	
Engineering Problems	193	1		1	
Drawing	117		11		22

Second Year.

Subject.	No.	Hours per week.			
		First Term.		Second Term	
		Lect.	Lab'y.	Lect.	Laby'.
Vacation Work	220				
Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Optics	197	1	1½	1	1½
Hydrostatics	196			1	1
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Theory of Mechanism	25	2		2	
Steam Engines	38	1			
Electricity	138,139	2	2½	2	2½
Engineering Chemistry	85			1	
Organic Chemistry	87	1			
Banking and Finance	66	1		1	
Drawing	124		9		16
Chemical Laboratory	81		6		
Machine Tools	28a			1	

Third Year.

Vacation Work	220				
Mechanics of Machinery	26	1		1	
Machine Design	27	2	3¼	2	3¼
Hydraulics	29,30	2		2	1
Thermodynamics	33,35	2	2	2	1½
Heat Engines	39	1		1	
Electrochemistry	101,102	2	3		
Magnetism and Electricity	142	2		2	
Alternating Current	143	1		1	
Electrical Design	145	1	1½	1	3
Electrical Laboratory	144		4		4
Engineering Chemistry	94	1		1	
Ferro-Metallurgy	181	1		1	
Limited Companies	67	1		1	3

Fourth Year.

Applied Electricity	146,147	3	16	3	16
Cost Keeping, etc	69	1		1	
Thesis	219				
And one of:					
(d) Hydraulics	31, 31a, 32	3	9	3	9
(g) Thermodynamics	36, 36a, 37	3	9	3	9
(h) Electrochemistry	108, 109	2	9	2	9

8. DEPARTMENT OF METALLURGICAL ENGINEERING.

The object of this course is to provide instruction and preliminary training for those who intend to become metallurgical engineers. Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' experience in metallurgical work.

First Year.

Subject	No.	Hours per week.			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Algebra	187	2		2	
Plane Trigonometry	189	2			
Analytical Geometry	188	1		2	
Descriptive Geometry	115	1		1	
Surveying	205, 206	1	8	1	
Statics	10	2		2	
Dynamics	11	2		2	
Elementary Chemistry	75	2		2	
Electricity	135, 136	2		2	
Engineering Problems	193	1		1	
Drawing	117		11		20

Second Year.

Calculus	190	2		2	
Descriptive Geometry	121	1		1	
Dynamics	12	1		1	
Strength of Materials	13	2		2	
Hydrostatics	196			1	1½
Electricity	140			1	
Steam Engines	38	1			
Chemistry	79, 85	2		2	
Physical Chemistry	90	2		2	
Banking and Finance	66	1		1	
Chemical Laboratory	93		10		8
Mineralogy	169		1		1
Mining	170, 171	1	3	1	
Metallurgy	183, 185	1		2	2
Spanish		1		1	
Drawing	121		5		5

Third Year.

Subject	No.	Hours per week			
		First Term		Second Term	
		Lect.	Lab'y.	Lect.	Lab'y.
Theory of Mechanism	25	2		2	
Hydraulics	29*a*	2		2	
Theory of Structures	19	2			
Limited Companies	67	1		1	
Analytical Chemistry	80		1		1
Electrochemistry	101, 102	2	3		
Ferro-Metallurgy	181	1		1	
Cement and Concrete	21			1	
Assaying	173	1	2		2
Metallurgy	186	1	1	4	6
Mining	172			2	3
Ore Dressing	177	1		1	
Heat	198	1	1½		
Chemical Laboratory	9		4		4
Drawing			3		

Fourth Year.

Thermodynamics	34	1		1	
Heat Engines	39	1		1	
Ore Dressing		2	2	2	4
Assaying	174			1	3
Cost-Keeping	70	1		1	
Plant Design		1	3	1	3
Power	32*a*, 39*a*, 141		3		3
Metallurgy	186*a*	2	8	2	8
Thesis	219		3		3

OUTLINE OF COURSES OF INSTRUCTION.

APPLIED MECHANICS.

10. STATICS:—*T. R. Loudon.*

Departments 1, 2, 3, 4, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with forces in a single plane, and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

11. DYNAMICS:—*J. McGowan.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 2 hours per week; both terms.

This course of lectures deals with bodies having motion of translation in one plane; also with relative motion, momentum, work and energy.

Text book:—Tutorial Dynamics—Briggs and Bryan.

12. DYNAMICS OF ROTATION:—*W. J. Loudon.*

Departments 1, 2, 3, 7 and 8, II Year ; 1 hour per week; both terms.

This course covers angular motion, including moments of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the simple theory of the fly-wheel and the governor.

Text book:—Dynamics of Rotation—Worthington.

13. STRENGTH OF MATERIALS:—*P. Gillespie.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; 2 hours per week; both terms.

In this course the strength and elasticity of materials are mathematically treated. The stresses in such elements of structures as the tie rod, the beam, the strut and the member subjected to shear are investigated and the elementary principles of design established. In the lecture and drafting rooms through numerous problems involving the design of simple beams, columns, riveted connections, etc., these principles are exemplified. The work includes also the discussion of eccentric loading, suddenly applied loads and repeated stresses.

Reference Book:—Mechanics of Materials—Merriman.

14. STRENGTH AND ELASTICITY OF MATERIALS:—*J. McGowan.*

Departments 1, 3 and 4, III Year; 2 hours per week; one term.

This course is intended to give the student an introduction to the experimental study of the strength and elasticity of materials. It is intended that he shall acquire some familiarity with the construction and operation of testing machines and with the properties of the ordinary building materials.

Reference Book:—Laboratory Instructions, Department of Applied Mechanics, U. of T., 1913.

16. THEORY OF STRUCTURES:—*J. McGowan.*

Departments 1 and 3, IV Year; 2 hours per week; both terms.

The work taken up in this course of lectures consists in swing bridges, arches, suspension bridges and some special features in column construction.

Reference Books:—Modern Framed Structures—Johnson. Typical Steel Railway Bridges—Thomson.

17. STRENGTH AND ELASTICITY OF MATERIALS:—*P. Gillespie.*

Departments 1, 3 and 4, IV Year; a laboratory course of about 11 hours per week.

This course of experiments is intended to give the student practice in investigating the elastic and physical properties of iron, steel, concrete, timber and other building materials.

Reference book:—Materials of Construction—Johnson.

18. THEORY OF STRUCTURES:—*C. R. Young.*

Department 1, III Year; 2 hours per week; both terms.

The work of the first term comprises a thorough discussion of restrained, continuous and trussed beams, multiple beam and box girders, plate girders and certain practical aspects of column design. A number of designs of girders and structural details are worked out in the class and drafting rooms.

The second term is given chiefly to the design of a riveted truss highway span and a riveted truss railway span, the complete designs being made in the lecture and drafting rooms.

19. THEORY OF STRUCTURES:—*C. R. Young.*

Departments 2, 3, 4, 6 and 8, III Year; 2 hours per week; first term.

The work is practically the same as that for Department 1 in the first term.

Text books:—Modern Framed Structures—Johnson, Bryan and Turneaure; Theory of Structures—Spofford; Bridge and Structural Design—Thomson; Aids in Structural Design—Young; Carnegie Pocket Companion; Cambria Steel.

20. FOUNDATIONS, RETAINING WALLS AND DAMS:—*P. Gillespie.*
Department 1, IV Year; 1 hour per week; both terms.
This course of lectures is devoted to the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subjects, and in order to gain familiarity with the fundamental principles involved, a part of the first term is given over to the consideration of the theory of compound stress. The most approved forms of construction of retaining walls, footings, abutments, piers and dams are then described, and typical designs are worked out in the class and drafting rooms.
Text books and books of reference:—Retaining Walls for Earth—M. A. Howe; Walls, Bins and Grain Elevators—M. S. Ketchum; A Treatise on Masonry Construction—I. O. Baker; Design and Construction of Dams—E. Wegmann.

21. CEMENTS AND CONCRETE:—*P. Gillespie.*
Departments 1, 4 and 8, III Year; 1 hour per week; second term.
The manufacture, testing and use of Portland cement and the fundamentals of the theory of reinforced concrete are discussed in this course of lectures.

22. REINFORCED CONCRETE:—*P. Gillespie.*
Departments 1, 3 and 4, IV Year; 1 hour per week.
The theory of the strength of reinforced concrete elements including the beam, the slab, the T-beam and the column, is continued in this course.
The analysis of the monolithic arch by the elastic theory is discussed, and the student is required in the drafting room to apply his knowledge to the design of simple structures.
Reference books:—Principles of Reinforced Concrete Construction—Turneaure and Maurer; Concrete, Plain and Reinforced—Taylor and Thompson.

23. IRON AND STEEL:—*T. R. Loudon.*
Taken by students in IV Year, who select the options (*c*) Structural Engineering, and (*e*) Strength and Elasticity of Materials.
Metallography—Mechanical Treatment, Heat Treatment; Metallurgy; Physical Properties; 1 lecture per week. Laboratory, second term.

24. MILL BUILDING DESIGN:—*C. R. Young.*
Departments 1 (*Structural Engineering Option*), 3 and 4 (*Architectural Engineering Option*), IV Year; 1 hour per week; both terms.

The structural problems involved in the design of mill buildings of timber, steel and reinforced concrete are discussed in this course of lectures. Consideration is given to the various types of buildings, the conditions governing their choice and the details of construction in different materials. Designs of portions of mill buildings are worked out in the class and drafting rooms.

Text books:—Mill Buildings—Tyrrell; Steel Mill Buildings—Ketchum.

24*a*. MISCELLANEOUS STRUCTURES:—*C. R. Young.*

Department 1 (*Structural Engineering Option* and *Sanitary and Highway Engineering Option*), IV Year; 1 hour per week, second term.

In this course of lectures the application of theoretical principles to the design of a variety of structures is made. Among those structures discussed are transmission line towers, elevated tanks and their supporting towers, standpipes, large pressure pipes, sewers, culverts, small highway bridges, sub-surface tanks and tall chimneys. Whenever possible the lecture work is followed up by designs in the drafting rooms.

MACHINERY.

25. THEORY OF MECHANISM:—*J. H. Parkin.*

Departments 3 and 7, II Year; Department 8, III Year; 2 hours per week; both terms.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and the efficiency of machines considered. Investigations of the velocities of points and links are made. The design of gear teeth and the application of trains of gears are taken up, also problems in static equilibrium.

Problems are worked out in the drafting room in which the methods given are employed.

Text book:—Theory of Machines—Angus.

26. MECHANICS OF MACHINERY:—*J. H. Parkin.*

Departments 3 and 7, III Year; 1 hour per week; both terms.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the fly-wheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is fully taken up and also the efficiency of machines.

Text book:—Theory of Machines—Angus.

27. MACHINE DESIGN—*J. H. Billings.*

Departments 3 and 7, III Year; 2 hours per week; both terms. Department 6, III Year; first term only.

Using the previous work in mechanics and kinematics as a groundwork, the lectures in this course deal with the design of shafting, journal bearings, gearing, flywheels, belting, springs, clutches, ball and roller bearings, machine supports, framing, etc.

The problems worked out in the design room are planned to include the principal parts of some complete machine such as an engine or machine tool.

The design work occupies $7\frac{1}{2}$ hours per week for Department 3, $4\frac{1}{2}$ hours for Department 6 and $3\frac{1}{4}$ hours for Department 7.

28. ADVANCED MACHINE DESIGN—*J. H. Billings.*

Department 3, IV Year; lectures, 1 hour per week; design, 4 hours per week; both terms.

The work of this course gives practice in the design of complete machines from specifications, having regard for durability, safety, cost of materials, and difficulties in casting, machining and assembling. Mechanisms are developed to give required motions and control.

The lectures deal also with compound stress, helical gearing and questions of vibration and stability. Machine tools, automatics and process machinery are discussed as far as time will allow.

28*a*. MACHINE TOOLS—*J. H. Billings.*

Departments 3, 6 and 7, II Year; 1 hour per week; second term.

A course of lectures dealing with the construction and operation of machine tools and some classes of process machinery. The object of the course is to familiarize the student with the principles of metal removal and acquaint him with a few typical machine tools.

HYDRAULICS.

29. HYDRAULICS—GENERAL COURSE:—*J. J. Traill.*

Departments 1, 3 and 7, III Year; 2 hours per week.

This is an introductory course of lectures in hydraulics, and is devoted to the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifices and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full, together with other kindred subjects.

The object of this course is to provide the student with a good working knowledge of the fundamental principle of hydraulics, such as is useful in practical work, and is necessary to the intelligent investigation of more advanced problems, such as the design of turbines, water-wheels and power plants generally.

29*a*. HYDRAULICS:—*J. J. Traill.*

Departments 2 and 8, III Year; Department 6, IV Year.

This course deals with the development and discussion of fundamental formulas relating to the flow of water in pipes, the measurement of water by various methods, the conditions of flow in open channels and in pipes partly full. This work is followed by a brief discussion on pumps and other hydraulic machines.

30. HYDRAULIC LABORATORY:—*R. W. Angus, J. J. Traill.*

Department 1, III Year; 3 hours per week; one term. Departments 3 and 7, III Year; 4 periods of 3 hours each.

The work in this course is intended to illustrate the lecture course given in Hydraulics and to give the student some working acquaintance with the formulas met with in practice. Experiments are made to determine the coefficients for an orifice and the coefficients of discharge for a weir. The results of these experiments are used in measuring the discharge in subsequent experiments on meters and for the determination of hydraulic resistances in various cases of flow in pipes.

31. HYDRAULICS:—*J. J. Traill.*

Departments 1, 3 and 7, IV Year; 1 hour per week; both terms.

A discussion of rainfall, evaporation and run-off relations is taken up, followed by a study of the investigation and use of stream flow data. Flow in pipes is taken up, such problems as water-hammer, flow in branched pipes and water-mains discharging along their length being considered. Flow over weirs and steady non-uniform flow in open channels are also studied.

31*a*. HYDRAULICS:—*R. W. Angus.*

Departments 1, 3 and 7, IV Year; 2 hours per week, both terms.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge power and efficiency being fully taken up.

Text books:—Centrifugal Pumps—Loewenstein and Crissey; Hydraulics—Merriman; Water Power Engineering—Mead.

32. HYDRAULICS:—*R. W. Angus, J. J. Traill.*

Departments 1, 3 and 7, IV Year; about 10 hours per week.

A laboratory course devoted to experimental work on turbines of various types and centrifugal and turbine pumps and other similar devices. This experimental work is arranged to illustrate the lectures on turbine and pump design. The experiments are made on two large turbine pumps used in the laboratory supply, as well as on apparatus specially designed for instruction. Various methods of measuring water-power and the efficiency of machines are also given.

32*a*. POWER:—*J. J. Traill.*

Departments 2, 6 and 8, IV Year; 24 hours.

A laboratory course of experiments on orifices, weirs, turbines, meters, pumps, etc.

32*b*. HYDRAULICS:—*J. J. Traill.*

Department 1, IV Year.

This is a lecture and laboratory course of six hours per week, first term, dealing with the flow of water in pipes and open channels, measurement of water, and pumps and pumping.

HEAT ENGINES.

33. THERMODYNAMICS:—*R. W. Angus.*

Departments 3, 6 and 7, III Year; 2 hours per week.

A lecture course in which the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

34. THERMODYNAMICS:—*R. W. Angus.*

Departments 1, 2 and 8, IV Year; 1 hour per week; both terms.

This course is especially designed to give the student a working knowledge of thermodynamics as applied to the perfect gas and steam so that he will be able to understand clearly the action of air compressors, steam engines, etc. After deducing general principles, the efficiency of compressed air transmission and the relative merits of different types of compressors are discussed. The steam engine and boiler are also discussed.

35. THERMODYNAMIC AND MECHANICAL LABORATORY:—R. *W. Angus, L. M. Arkley.*

Department 3, III Year; 2 hours per week, first term; 3 hours per week, second term. Departments 6 and 7, III Year; 2 hours per week, first term; 1½ hours per week, second term.

This laboratory course is designed to assist in a clearer understanding of thermodynamics, machine design and mechanics of machinery. The work in thermodynamics consists in the setting of slide valves, indicating engines measuring the brake horse-power, simple engine and boiler tests and the testing of gas and gasoline engines under various conditions. The mechanical laboratory work deals with the efficiency of belts and ropes as well as of several machines of simple construction. An examination of lubricating oils is also made by means of oil testing machines and other well-known devices. Experiments are also made on the balancing of reciprocating and rotating masses.

36. THERMODYNAMICS:—*R. W. Angus.*

Departments 3 and 7, IV Year; 2 hours per week; both terms.

This is a continuation of the introductory course, the subject being here treated from a general standpoint and the idea of entropy and of the absolute scale of temperatures being introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, and injectors.

Text book:—Thermodynamics—Peabody.

36*a*. THERMODYNAMICS:—*L. M. Arkley.*

Departments 3 and 7, IV Year; 1 hour per week, both terms.

Steam Power Plants. This course follows in logical order the courses on heat engines given in the second and third years. In it a study of the prime movers and auxiliary apparatus required in a power plant is made in such a manner as to indicate the proper choice of equipment under various conditions of operation.

37. THERMODYNAMICS:—*R. W. Angus, L. M. Arkley, J. H. Parkin.*

Departments 3 and 7, IV Year; about 10 hours per week.

The work in this year is a continuation and extension of the work covered in the third year laboratory course. Careful tests are made of engines of various types, such as simple, tandem and cross-compound steam engines; steam turbines; refrigerating machines; air engines; injectors and steam pumps, etc.; and an application is made of Hirn's analysis and the entropy diagram to the results obtained. A complete set of experiments is made on each machine and the result plotted so as to show clearly to the student the effect of various alterations in the adjustment of the engine on the resulting efficiency.

Several modern gas and gasoline engines and a gas producer give ample opportunity for the study of this type of engine, and facilities are provided for sampling the gas supply and exhaust.

Two experimental stacks and three boilers enable results to be obtained on boiler efficiency and chimney draft.

38. STEAM ENGINES:—*L. M. Arkley.*
Departments 3, 7 and 8, II Year; one hour per week; second term.
This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple forms of valve gears used in the operation of such engines.

39. HEAT ENGINES:—*L. M. Arkley.*
Departments 3 and 7, III Year; Department 8, IV Year; one hour per week, both terms.
This course in heat engines is intended for students in Mechanical, Electrical and Metallurgical Engineering, to be supplementary to the general course of lectures in thermodynamics.
The principal commercial forms of heat engines are dealt with in a more or less descriptive manner; special attention is given to considerations affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

39*a*. POWER:—*R. W. Angus, L. M. Arkley.*
Departments 1, 2 and 8, IV Year; 21 hours.
A course of experiments with steam and gas engines, compressed air, etc.

ARCHITECTURE.

40. HISTORY OF ARCHITECTURE:—*H. H. Madill.*
Department 4, I Year; one hour per week; both terms.
In this course the development of architecture is treated very briefly and in an elementary manner, from the Pyramids of Egypt to the present, laying special emphasis on the Egyptian, Grecian and Western Asiatic work. The antique Greek and Roman orders are studied, and the students are required to make rendered drawings in the studio of certain orders and elements. An attempt is made to develop the student's sense of proportion, and in the latter part of the second term he is required to study a simple problem in design.

41. HISTORY OF ARCHITECTURE:—*H. H. Madill.*
Department 4, II Year; one hour per week; both terms.
The Classical, Early Christian, Byzantine and Romanesque styles of architecture are studied with the aid of the lantern. The student is required to become acquainted with the best examples in these styles in order that his sense of proportion and his taste may be developed and his knowledge of the different elements extended.

42. HISTORY OF ARCHITECTURE:—*A. Wellesley McConnell.*
Department 4, III Year; one hour per week; both terms.
In this course the work of the previous year is continued, with the study of Gothic and the Renaissance.

43. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.
In this course the development of Ornament is traced from the beginning through Egyptian, Assyrian, Grecian, Roman, Byzantine, Romanesque and Moresque styles. An attempt is made to analyze ornament of the best periods and to systematize the principles followed in form and color. The development and types of mouldings are also studied.

44. HISTORY OF ORNAMENT:—*A. Wellesley McConnell.*
Department 4, III Year; one hour per week; both terms.
A continuation of the course in Ornament given to the Second Year. Instruction is given in lectures with the aid of the stereopticon. The students are required to become familiar with the characteristics and forms of the ornament used in the Gothic and Renaissance styles.

45. ORDERS OF ARCHITECTURE:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.
Lectures on the Five Orders of Architecture, their affiliated forms and the other elements used in design. Simple problems in elementary design involving the use of the orders and other elements are set from time to time.

46. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, II Year; one hour per week; both terms.
This course is given by means of individual instruction in the classroom by criticisms of the solutions of different problems set during the year and by a series of lectures. It is in this course that the student begins the serious study of design; continued practice in architectural drawing and rendering affords the training necessary to make the student a proficient draughtsman.

47. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, III Year.
Theory and practice of Design.
This course is given by individual instruction in the studio and by lectures. The greater part of the course is devoted to problems in design, and forms a continuation of the course given in the preceding year.

48. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, IV Year.
The entire course is devoted to advanced academic training in designing the more monumental classes of buildings. The student is required to design and submit sketches and working drawings of some subject to be selected by himself.

48*a*. ARCHITECTURAL DESIGN:—*A. Wellesley McConnell.*
Department 4, IV Year; Architectural Engineering Option.
A short course of lectures and studio work referring especially to the artistic side of the design of commercial buildings.

49. FREEHAND DRAWING AND WATER COLOR PAINTING:—*C. W. Jefferys.*
Department 4, I Year; 2 hours per week; both terms.
Drawing from still life objects. Primary freehand perspective. Primary pencil and pen and ink rendering.

49*a*. Department 4, II Year; 2 hours per week; both terms.
Drawing and monochrome painting from still life.
Drawing from the cast.
Pencil, pen and ink, and monochrome rendering.
Primary water color.
Drawing from landscape and natural objects.

49*b*. Department 4, III Year; 2 hours per week; both terms.
Drawing from the cast.
Water color from still life. Water color rendering.
Drawing from landscape and natural objects.
Students who are sufficiently advanced are admitted to the Fourth Year Life Drawing Class.

49*c*. Department 4, IV Year; 2 hours per week; both terms.
Water color from still life and from landscape.
Drawing from life.
Water color rendering.

50. MODELLING:—*J. L. Banks.*
Department 4; I Year; 2 hours per week; both terms.
The Orders. Synopsis of styles.

50*a*. Department 4; II Year; 2 hours per week; both terms.
The styles elaborated.
Problems in figures and in relation to architecture.

50*b*. Department 4; III Year; 2 hours per week; both terms.
Styles continued.
Problems, combination of figure, ornament and architecture, and their relative values.

50*c*. Department 4; IV Year; 2 hours per week; both terms.
Modelling from life.
Anatomy.
Composition of groups.

51. STRUCTURAL DESIGN:—*C. R. Young.*
Departments 1 (*Structural Engineering Option*) and 4, IV Year; 1 hour per week; both terms.
This course of lectures is devoted to the problems connected with the structural design of buildings of timber, steel and reinforced concrete. The various structural elements, such as the floors, columns, footings, walls and wind bracing, are fully discussed, and portions of typical buildings are designed in the class and drafting rooms.

Text books:—Architectural Engineering—Freitag; Steel Construction —Tucker; Structural Details—Jacoby; Architects' and Builders' Pocket Book—Kidder.

52. BUILDING MEASUREMENT:—*C. H. C. Wright.*
Department 4, I Year; 1 hour per week; both terms.
In this course of lectures the principles of measurements and mensuration with special reference to buildings will be discussed. With this is combined 4½ hours per week practice in measurements of existing buildings, quantities, etc.

53. BUILDING MATERIALS:—*C. H. C. Wright.*
Department 4, III Year; 2 hours per week; both terms.
The structural and aesthetic value of the various building materials.

54. SANITARY SCIENCE:—*C. H. C. Wright.*
Department 4, IV Year; 1 hour per week; both terms.
Modern plumbing, its design and installation.

54*a*. HEATING AND VENTILATING:—*C. H. C. Wright.*
Department 4, IV Year; 1 hour per week; both terms.
The design of different systems, where they should be used, heating specifications, etc.

ASTRONOMY AND GEODESY.

55. ASTRONOMY, ELEMENTARY:—*C. A. Chant.*
Department 1, II Year; 1 hour per week; both terms.
A course in descriptive Astronomy, explaining the ordinary astronomical terms, and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.
Text book:—Manual of Astronomy—C. A. Young.

56. ASTRONOMY AND GEODESY:—*L. B. Stewart.*
Department 1, III Year; 2 hours per week.
The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.
In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.
Text books:—Practical Astronomy as applied to Geodesy and Navigation—Doolittle; Nautical Almanac, 1920.

57. FIELD WORK:—*L. B. Stewart, S. R. Crerar.*
Department 1, III Year; about 1 hour per week; first term.
The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures.

58. ASTRONOMY (Advanced):—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

59. GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year; 2 hours per week.

The lecture course includes a description of the methods of measuring base lines and the angles of a triangulation; the geometry of the spheroid with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonometric and precise spirit levelling; the determination of the figure of the earth by arc measurements, and by the pendulum; the theory of map projections, etc.

60. ASTRONOMY, GEODESY AND METROLOGY:—*L. B. Stewart.*

Department 1, IV Year: about 23 hours per week.

The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of prime vertical transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape and with invar wires, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of network of triangles, etc.

BIOLOGY.

62. ELEMENTARY BIOLOGY:—*E. M. Walker.*

Department 6, I Year; 3 hours per week; each term.

An elementary laboratory course on the nature and identification of plant and animal tissues and products, with microscope practice.

63*a*. ELEMENTARY BIOLOGY:—*E. M. Walker.*

Department 1, IV Year.

An Elementary Course of Laboratory work and demonstrations in General Biology, six hours per week, first term.

64. BACTERIOLOGY:—*J. G. Fitzgerald.*
Departments 1, 5 and 6, IV Year; a lecture and laboratory course of 8 hours per week, second term, on elementary bacteriology.

BUSINESS.

65. ACCOUNTING:—*W. S. Ferguson.*
All Departments, I Year; 1 hour per week; both terms.
The principles of accounting; illustrated by typical accounts.

66. BANKING AND FINANCE:—*M. A. Mackenzie.*
All Departments, II Year; 1 hour per week; both terms.
Money and the instruments of credit; stocks and bonds.

67. LIMITED COMPANIES:—*A. R. Clute.*
All Departments, III Year; 1 hour per week; both terms.
Partnerships; the history and development of the limited liability company; the Companies Acts; Company finance.

68. CONTRACTS AND SPECIFICATIONS:—*C. R. Young.*
Departments 1 and 4, IV Year; 1 hour per week; second term.
This course of lectures deals with the fundamental principles of contract and specification writing. The critical examination of typical specifications and agreements by the class forms an essential feature of the instruction.

Text books:—Engineering Contracts and Specifications—Johnson: Elements of Specification Writing—Kirby; Specifications and Contracts—Wadell-Wait; Principles of Specification and Agreement Writing—Young.

69. COST-KEEPING, ETC.:—*J. W. Bain, H. W. Price, L. M. Arkley.*
Departments 3, 5, 6 and 7, IV Year.
Works management, mechanical specifications, analysis of costs, reports.

70. COST-KEEPING:—*H. E. T. Haultain, G. A. Guess.*
Departments 2 and 8, IV Year.
Mining and Metallurgical costs and cost keeping methods, ore contracts, smelter settlements, practical problems.

CHEMISTRY.

75. ELEMENTARY CHEMISTRY:—*E. G. R. Ardagh.*
All Departments, I Year; 2 hours per week; both terms.
A lecture course in elementary chemistry dealing with the metals and non-metals, with experimental illustrations.

78. INORGANIC CHEMISTRY:—*L. J. Rogers.*
Department 6, I Year; about 12 hours per week; both terms.
A laboratory course of quantitative experiments illustrating the use of the sensitive balance, and confirming the fundamental laws of chemistry; qualitative inorganic analysis; quantitative analysis of pure salts; inorganic preparations; molar weight determinations.
Text book:—Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

79. INORGANIC CHEMISTRY:—*E. G. R. Ardagh.*
Departments 2, 6 and 8, II Year; 1 hour per week; first term.
A lecture course on the chemistry of the metals; a continuation of Course 75.

80. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Departments 2, 6 and 8, III Year; 1 hour per week: both terms.
A lecture course on the principles of chemical analysis; select gravimetric and volumetric methods; technical analysis.

81. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Departments 1, 2, 3 and 7, II Year; 6 hours per week; one term.
Laboratory practice in elementary qualitative and quantitative analysis.
Text book:—A Smaller Chemical Analysis—Newth.

82. ANALYTICAL CHEMISTRY:—*J. W. Bain.*
Department 2, II Year; 3 hours per week; both terms.
A laboratory course in the gravimetric determination of metals and acids, with elementary volumetric analysis.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

83. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Department 8, II Year; 14 hours per week; 17 weeks.
A laboratory course comprising gravimetric and volumetric methods, acidimetry and alkalimetry.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

84. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Department 6, II Year; 6 hours per week; both terms.
A laboratory course in qualitative and elementary quantitative chemical analysis; inorganic preparations.
Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

85. ENGINEERING CHEMISTRY:—*J. W. Bain.*
Departments 1, 2, 3, 6, 7 and 8, II Year; 1 hour per week; second term.
A lecture course consisting of a study of the industrial production and application of heat and light, and of the chemistry of fuel and the products of combustion.

86. INDUSTRIAL CHEMISTRY:—*W. H. Ellis.*
Department 6, II Year; 1 hour per week; both terms.
A lecture course on the manufacture of salts, acids, alkalies and inorganic chemicals.
Text book:—Inorganic Chemistry—Thorp.

87. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 1, 2, 3 and 7, II Year; 1 hour per week; first term.
A lecture course in elementary organic chemistry.
Text book:—Theoretical Organic Chemistry—Cohen.

88. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 6, II Year; 2 hours per week; both terms.
A lecture course dealing with the aliphatic compounds.
Text book:—Theoretical Organic Chemistry—Cohen.

90. PHYSICAL CHEMISTRY:—*W. L. Miller.*
Departments 6 and 8, II Year; 2 hours per week; both terms.
A course of lectures on the elements of chemical mechanics, and the theory of solutions.

91. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 5, III Year; 19 hours per week; 16 weeks.
A laboratory course on the technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, gases, fuels, etc.

92. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Department 6, III Year; 11 hours per week, first term; 13 hours per week, second term.
A laboratory course in volumetric and technical analysis.

93. ANALYTICAL CHEMISTRY:—*L. J. Rogers.*
Departments 2 and 8, III Year; 5 hours per week; both terms.
A laboratory course on the technical analysis of ores and furnace products.

94. ENGINEERING CHEMISTRY:—*E. G. R. Ardagh.*
Departments 1, 2, 3, 5, 6 and 7, III Year; 1 hour per week; both terms.
A lecture course on the application of chemistry to engineering problems; air, water, sewage, the materials of construction, explosives, etc.

95. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on petroleum and its products, coal tar and its products, the destructive distillation of wood; fats, oils, soap, sugar, starch, and gums; fermentation industries, etc.
Text book:—Industrial Chemistry—Thorp.

96. CHEMICAL PLANT:—*J. W. Bain.*
Departments 5 and 6, III Year; 1 hour per week; both terms.
A lecture course on the machinery and plant used in chemical manufacturing.

97. ORGANIC CHEMISTRY (A):—*M. C. Boswell.*
Departments 5 and 6, III Year; 2 hours per week; both terms.
A lecture course on the aromatic series.
Text book:—Theoretical Organic Chemistry—Cohen.

98. ORGANIC CHEMISTRY (B):—*F. B. Allan.*
Departments 5 and 6, III Year; 1 hour per week; second term.
A lecture course on stereoisomerism, desmotropism, etc.

99. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 5, III Year; 19 hours per week; 8 weeks.
A laboratory course in organic preparations in the aromatic series; organic analysis.

100. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Department 6, III Year; 17 hours per week; 4 weeks.
A laboratory course in organic preparations.

101. ELECTROCHEMISTRY:—*W. L. Miller.*
Departments 5, 6, 7 and 8, III Year; Department 2, IV Year; 2 hours per week; first term.
A lecture course on elementary electrochemistry, illustrated by experiments.

102. ELECTROCHEMISTRY:—*W. L. Miller and J. T. Burt-Gerrans.*
Departments 5, 6, 7 and 8, III Year; 3 hours per week; first term.
A laboratory course in quantitative measurements to accompany Course 101.

103. INORGANIC CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; 1 hour per week; first term; 2 hours per week; second term.
A lecture course on chemical theory.

104. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on advanced organic chemistry.

105. ORGANIC CHEMISTRY:—*M. C. Boswell.*
Departments 5 and 6, IV Year.
A laboratory course in advanced organic chemistry.

106. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on selected subjects in chemical technology.

107. INDUSTRIAL CHEMISTRY:—*J. W. Bain.*
Departments 5 and 6, IV Year; about 28 hours per week; both terms.
A laboratory course in industrial problems.

108. ELECTROCHEMISTRY:—*J. T. Burt-Gerrans.*
Departments 5, 6 and 7, IV Year; 2 hours per week; both terms.
An advanced lecture course on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace with special consideration of efficiency.
Text books:—Electrometallurgy—Borchers; Electrochemistry—Le Blanc; Electrochemistry—Luepke.

109. ELECTROCHEMISTRY:—*W. L. Miller and J. T. Burt-Gerrans.*
Departments 5, 6 and 7, IV Year; about 28 hours per week.
A laboratory course accompanying Course 108.

110. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, IV Year; 1 hour per week; both terms.
A lecture course on the composition and examination of air, water and food; poisons and their detection.

111. SANITARY AND FORENSIC CHEMISTRY:—*W. H. Ellis.*
Departments 5 and 6, IV Year.
A laboratory course accompanying Course 110.

112. ANALYTICAL CHEMISTRY:—*E. G. R. Ardagh.*
Department 2, IV Year, 12 hours per week; first term.
A laboratory course comprising analysis of ores and furnace products.

113. SANITARY CHEMISTRY:—*H. M. Lancaster, E. G. R. Ardagh.*
Department 1, IV Year.
A lecture and laboratory course of about 16 hours per week for one term on water supply, sewage disposal, ventilation, etc.

DESCRIPTIVE GEOMETRY AND DRAWING.

115. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Departments 1, 2, 3, 6, 7 and 8, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solutions of problems relating to straight lines and planes.

116. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Department 4, I Year; 1 hour per week; both terms.
This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes, special reference being made to the determination of shades and shadows.

117. DRAWING:—*J. R. Cockburn.*
Departments 1, 2, 3, 6, 7 and 8, I Year; about 16 hours per week.
Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.

118. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*
Department 4, I Year; about 15 hours per week.
Copying from the flat, lettering, topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings. Elements and principles of Architecture.

121. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Departments 1, 2, 3, 7 and 8, II Year; 1 hour per week; both terms.
This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades, shadows and perspective.

122. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Department 4, II Year; 1 hour per week; both terms.
This course of lectures is a continuation of the work taken in the First Year with the addition of problems relating to curved surfaces, shades, shadows and perspective.

123. DRAWING:—*J. R. Cockburn.*
Departments 1 and 2, II Year. Department 1, about 14 hours per week. Department 2, about 7 hours per week; both terms.
Coloring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics and strength of materials: measured drawings; elementary design.

124. DRAWING:—*J. R. Cockburn.*
Departments 3 and 7, II Year; about 15 hours per week; both terms.
Coloring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

125. DRAWING:—*J. R. Cockburn, A. Wellesley McConnell.*
Department 4, II Year; about 18 hours per week; both terms.
Freehand drawing including monochrome and colors; exercises from the orders of architecture; principles of shades, shadows and perspective; elementary architectural design; problems in descriptive geometry relating to solids bound by curved surfaces; solution of problems in optics and strength of materials; measured drawings.

126. DRAWING:—*J. R. Cockburn.*
Department 6, II Year.
Same as Department 3, with exception that theory of mechanism is not included.

127. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*
Department 1, III Year; 1 hour per week; first term.
This course of lectures deals with spherical projections, the principles of mapmaking, and the graphical solution of spherical triangles.

128. DRAWING:—*J. R. Cockburn, C. R. Young.*
Department 1, III Year; about 12 hours per week.
Principles of mapmaking, spherical projection, plotting of original surveys relating to topographical and railway work; problems in theory of construction; original design of various structures; measured drawings.

129. DRAWING:—*J. R. Cockburn.*
Department 2, III Year; 4½ hours per week.
Plotting of original surveys, relating to topographical and railway work and mining; problems in theory of construction; original design; measured drawings.

130. DRAWING:—*J. R. Cockburn, C. R. Young, A. Wellesley McConnell.*
Department 4, III Year; about 16 hours per week, first term; 22 hours per week, second term.
Advanced work in monochrome and colors; problems in shades, shadows and perspective; architectural design; problems in theory of construction, including framed structures.

131. DESCRIPTIVE GEOMETRY:—*J. R. Cockburn.*

Department 4, III Year; 1 hour per week; first term.
Advanced work in shades, shadows and perspective.

132. DRAWING:—*J. R. Cockburn, C. R. Young.*

Departments 2, 3 and 6, III Year; 3 hours per week; both terms.
Problems in design dealing with the theory of structures.

ELECTRICITY.

135. MAGNETISM AND ELECTRICITY:—*H. W. Price.*

Departments 1, 2, 3, 6, 7 and 8, I Year; 2 hours per week; first term.

A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.

136. ELECTRIC CIRCUITS:—*W. S. Guest.*

Departments 1, 2,3 , 6, 7 and 8, I Year; 2 hours per week; second term.

This course of lectures concerns chiefly fundamental principles relating to electric circuits, and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.

138. ELECTRICITY:—*T. R. Rosebrugh.*

Departments 3, 6 and 7, II Year: 2 hours per week; both terms

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement of resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice of conditions of measurement on the accuracy of the result is considered.

139. ELECTRICAL LABORATORY:—*W. S. Guest.*

Departments 3, 6 and 7, II Year; 2½ hours per week; both terms.

This laboratory course is closely associated with the lecture course 138 on electricity for the second year. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc., are practised, often under conditions such as occur in practice. The work also includes methods of calibration of measuring instruments for voltage, current, power and energy, and certain studies of properties of incandescent lamps.

140. ELECTRICITY:—*H. W. Price.*

Department 8, II Year; 1 hour per week; second term; Departments 5 and 6, III Year; 1 hour per week; second term; Department 2, III Year; Departments 1 and 4, IV Year; 1 hour per week.

A course designed to fit the requirements of non-electrical students. A study of essential principles is followed by discussion of electrical apparatus plants, power transmission, railways, etc.

141. POWER:—*H. W. Price.*

Departments 2, 6 and 8, IV Year; 24 hours.

Under the name "Power" a number of operating experiments are arranged to afford some familiarity with measuring instruments and direct and alternating current machinery.

142. MAGNETISM AND ELECTRICITY:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 2 hours per week; both terms.

A course of lectures on theory of magnetism and magnetic circuits, theory of direct current generators, motors, etc.

143. ALTERNATING CURRENT:—*T. R. Rosebrugh.*

Departments 3 and 7, III Year; 1 hour per week.

A first course of lectures on alternating current, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

144. ELECTRICAL LABORATORY:—*T. R. Rosebrugh, H. W. Price.*

Department 3, III Year; 4½ hours per week; Department 7, III Year; 6 hours per week.

This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with the magnetic properties of iron and steel, and study of iron losses in transformers and generators.

The course is arranged to stand in close relation to the lecture courses in the subjects of magnetism and electricity and alternating current (142, 143) for III Year, and to certain design work (145).

145. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year; 1 hour per week.

A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the design room.

146. ELECTRICAL DESIGN:—*H. W. Price.*

Department 7, III Year.

A design room is set apart for working out designs of electrical apparatus such as transformers, generators, motors, auxiliary apparatus, etc.

Special forms and notes are employed, arranged to suit the various studies. Certain models are provided to assist where necessary.

147. APPLIED ELECTRICITY;—*T. R. Rosebrugh.*

Department 7, IV Year.

This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines, wave analysis, etc.

148. ELECTRICAL LABORATORY;—*T. R. Rosebrugh, H. W. Price.*

Department 7, IV Year, in connection with 147.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers, single and polyphase alternators, synchronous motors, rotary converters, induction and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to lead the student to apply theory to practice as illustrated in the apparatus under test, with a view to an exact understanding of methods and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation. The best commercial measuring instruments are available.

GEOLOGY.

150. GEOLOGY (Elementary):—*W. A. Parks.*

Department 2, II Year; Department 1, III Year; 1 hour per week; both terms.

This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Introduction to Geology—Scott; Text Book of Geology—Dana.

151. ECONOMIC GEOLOGY. (Including Dynamical and Structural Geology):—*A. P. Coleman.*

Departments 2 and 5, III Year; 1 hour per week; first term; 2 hours per week; second term. Department 1, IV Year; 1 hour per week; both terms.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

152. ADVANCED GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year; 2 hours per week; both terms.

(A) *Pre-Cambrian Geology.*—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere.

Works of Reference:—Reports of the United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

(B) *Pleistocene Geology.*—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Interglacial and Postglacial beds are described, changes of climate are discussed with their probable causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is the centre of the most important development of Pleistocene in America.

(C) *Physiography.*—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

153. MINING GEOLOGY:—*A. P. Coleman.*

Department 2, IV Year; 1 hour per week; both terms.

A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side.

Works of reference:—Mineral Industry and the books mentioned under (A).

154. GEOLOGICAL EXCURSIONS:—*A. P. Coleman.*

Department 2, IV Year.

Trips to points of interest in the vicinity of Toronto.

155. ORE DEPOSITS:—*A. P. Coleman.*

Department 2, III Year; 1 hour per week; both terms.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

156. ECONOMIC GEOLOGY:—*Alex. MacLean.*

Department 2, III Year; 2 hours per week; second term.

Laboratory work on ores, manner of occurrence, vein structure, etc. Geological maps of typical mining regions.

MINERALOGY.

157. ELEMENTARY MINERALOGY:—*J. E. Thomson.*

Department 2, II Year; 2 lectures per week; first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

158. MINERALOGY:—*J. E. Thomson.*

Department 6, I Year; 3 hours per week, second term. Department 8, I year; 1 hour per week; first term.

Introduction to blow-pipe analysis, determination of minerals by inspection and physical tests.

Text books:—Text Book of Mineralogy—Dana; Determinative Mineralogy—Lewis.

159. PRIMARY MINERALOGY:—*A. L. Parsons.*

Department 1, II Year; 2 hours per week; first term.

A very brief introduction to the study of minerals and rocks.

Text books:—Minerals and how to study them—Dana; Handbook of Rocks—Kemp.

160. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*

Department 2, II Year; 1 hour per week, first term; 3 hours per week, second term.

Determination of minerals by inspection and by means of physical tests; introduction to blow-pipe practice.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

161. MINERALOGY:—*A. L. Parsons, J. E. Thomson.*
Department 1, II Year; 1 hour per week, first term; 2 hours per week, second term.
Determination of minerals by inspection and by means of physical tests; study of common rock types and their identification.
Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

163. ELEMENTARY PETROGRAPHY:—*T. L. Walker.*
Department 2, III Year; 1 hour per week.
A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.
Text books—Handbook of Rocks—Kemp; Rocks and rock minerals —Pirsson.

164. MINERALOGY:—*J. E. Thomson.*
Department 2, III Year; 2 hours per week.
Determination of minerals by means of the blow-pipe and physical properties.
Text books:—Mineral Tables—Eakle; Determinative Mineralogy—Lewis.

165. GENERAL PETROGRAPHY:—*T. L. Walker.*
Department 2, IV Year. 1 hour per week.
Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

166. PETROGRAPHY:—*T. L. Walker.*
Department 2, IV Year; 2 hours per week; both terms.
Study of the chief rock-forming minerals, of rocks in thin sections and in hand specimens.
Text books:—Rocks and Rock Minerals—Pirsson; Minerals in Rock Sections—Luquer.

167. CRYSTALLOGRAPHY:—*A. L. Parsons.*
Department 5, III Year; 1 hour per week.
A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

169. MINERALOGY:—*A. L. Parsons.*
Department 8, II Year; 1 hour per week.
Determination of minerals by physical properties.
Text Book:—Mineral Tables—Eakle.

MINING, ASSAYING AND ORE DRESSING.

170. MINING:—*H. E. T. Haultain.*
Department 2, II Year; 1 hour per week; first term. Department 8, II Year; 1 hour per week; both terms.
An introduction to the study of mining and ore dressing methods.

171. MINING AND ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, II Year; 3 hours per week; first term.
Introductory work with rock-drills and various ore dressing appliances.

172. MINING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, III Year; 2 hours' lectures per week, second term; 3 hours' laboratory work per week, second term.
General mining methods.

173. ASSAYING:—*H. E. T. Haultain, J. T. King.*
Departments 2 and 8, III Year; 1 hour lecture per week, first term; 3 hours' laboratory work per week, both terms; Departments 5 and 6, III Year; 1½ hours' laboratory work per week; both terms.
Assaying of various ores for gold, silver, lead and copper.

174. ASSAYING:—*H. E. T. Haultain, J. T. King.*
Departments 2 and 8, IV Year; 1 hour lecture per week, one term; 3 hours laboratory work per week, one term.
Continuation of the work of III Year.

175. MINING:—*H. E. T. Haultain.*
Department 2, IV Year; 1 hour lecture per week; both terms.
Special mining methods, examinations, reports.

176. MILLING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 3 hours' laboratory work per week; both terms.
Advanced work with ore dressing appliances, complete mill tests.

177. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Departments 2 and 8, III Year; 1 hour per week; both terms.

179. ORE DRESSING:—*H. E. T. Haultain, F. C. Dyer.*
Department 2, IV Year; 1 hour per week; both terms.

METALLURGY.

180. METALLURGY:—*G. A. Guess.*
Departments 2, 5 and 6, IV Year; 1 hour per week; both terms.
Advanced studies in the metallurgy of gold, silver, copper, lead, nickel, and zinc, metallurgical problems.

181. FERRO-METALLURGY:—*T. R. Loudon.*
Departments 1,2, 3, 5, 6, 7 and 8, III Year; 1 hour per week; both terms.
The physical properties of iron and steel and the circumstances that influence the strength, etc., of iron. The different modes of manufacture of iron and steel and the effect of different processes of making on the resulting products; explanations of specifications for iron and steel adopted by engineers.

182. METALLURGY:—*G. A. Guess.*

Department 2, IV Year; 6 hours' laboratory work per week; second term.

Calibration of pyrometers, blast furnace smelting and copper converting, cyanidation, acid leaching of copper ores, electrolytic refining of lead and copper, electrometallurgy.

183. METALLURGY:—*G. A. Guess.*

Departments 2, 6 and 8, II Year; 1 hour per week; second term.

An introduction to the study of general metallurgy.

184. METALLURGY:—*G. A. Guess.*

Departments 2, 5 and 6, III Year; 1 hour per week; both terms.

General metallurgy.

185. METALLURGY:—*G. A. Guess.*

Department 8, II Year; 1 hour per week, both terms.

A lecture course in the study of metallurgical fuels, their use, preparation, calorific value and temperature of combustion, introduction to the study of metallurgical processes. Problems.

Two hours' laboratory work, second term.

186. METALLURGY:—*G. A. Guess.*

Department 8, III Year; 1 hour per week; first term; 4 hours per week; second term.

The uses, properties and metallurgy of the metals except iron, with special reference to copper, nickel, lead and zinc. The study of clays and their industrial uses. An additional laboratory course of 100 hours.

186*a*. METALLURGY:—*G. A. Guess.*

Department 8, IV Year; 2 hours per week, both terms, and 9 hours' laboratory work, both terms.

Lixiviation of copper ores, design and organization of plants, metallurgical book-keeping, metallurgical balance sheets, thermal balance sheets, electrometallurgy, electrolytic refining processes, a particular study of Canadian problems.

MATHEMATICS.

187. ALGEBRA:—*A. T. DeLury.*

Departments 1, 2, 3, 6, 7, 8, I Year; 2 hours per week; both terms.

Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; graphic representation of functions and the introduction of the gradient function; proportion and progressions; interest forms and annuities, permutations, combinations, limits, the general theory of infinite series, binomial theorem, exponential and logarithmic series.

Text book:—Intermediate Algebra—DeLury.

188 ANALYTICAL GEOMETRY:—*I. R. Pounder.*

All Departments, I Year; 1 hour per week first term; 2 hours per week second term.

The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyperbola. The subject is treated so as to illustrate the general methods of analytical geometry.

189. TRIGONOMETRY, PLANE:—*M. A. Mackenzie.*

Departments 1, 2, 3, 6, 7, 8, I Year; 2 hours per week; first term.

Solutions of triangles and practical problems.

Text book:—Practical Trigonometry—Plane and Fawdry.

190. CALCULUS, DIFFERENTIAL AND INTEGRAL:—*S. Beatty.*

Departments 1, 2, 3, 4, 6, 7 and 8, II Year; 2 hours per week; both terms.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce the calculus.

191. TRIGONOMETRY, SPHERICAL:—*L. B. Stewart.*

Department 1, II Year; 1 hour per week; first term.

A course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Spherical Trigonometry—Todhunter and Leatham.

192. LEAST SQUARES, METHOD OF:—*L. B. Stewart.*

Department 1, III Year; 1 hour per week; first term.

The course of lectures includes: The general principles of probability, the law of error, direct measurements of equal and different weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Least Squares—Merriman.

ENGINEERING PROBLEMS.

193. Departments 1, 2, 3, 6, 7, 8, I Year; 1 hour per week; both terms.

In this course the time is devoted to problem work involving an application of the theory and principles laid down in the lecture course of the various subjects of the First Year.

TECHNICAL PHYSICS.

195. ACOUSTICS:—*G. R. Anderson.*

Department 4, III Year.

Wave motion, propagation, reflection and transmission of sounds. Laws of vibrating strings, pipes and forks. Velocity of sound. Musical scales. Absorption of sound by various substances, use of deadening material in buildings. Amount of reverberation permissible and desirable in public buildings Lectures and laboratory work.

196. HYDROSTATICS:—*G. R. Anderson.*

All Departments, II Year.

Laws of fluid pressure and application to machines. Density of solids and fluids, theory of flotation.

Lectures and laboratory work. Spring term.

197. OPTICS:—*G. R. Anderson.*

Departments 1, 2, 3, 6 and 7, II Year.

Rectilinear propagation of light, illumination, photometry, light standards. Distribution of light by reflectors and diffusers, general and selective absorption, economic values of artificial lights.

Laws of reflection and refraction, theory of optical instruments.

Light considered as wave motion, dispersion, spectrum analysis, colour phenomena, polarization.

Lectures and laboratory work, both terms.

197(*a*). OPTICS AND LIGHTING:—*G. R. Anderson.*

Dept. 4, II Year.

198. HEAT:—*G. R. Anderson.*

Departments 1, 5 and 8, III Year.

Generation and propagation of heat. General and industrial thermometry, calorimetry and pyrometry. Linear and cubical expansion, gas laws. Specific heat of solids, liquids and gases, latent heat of fusion and vaporization. Mechanical equivalent of heat. Carnot cycle.

Lectures and laboratory work, Fall term.

199. PHOTOGRAPHY:—*G. R. Anderson.*

Departments 1 and 4, III Year; Departments 3 and 7, IV Year.

The camera and its adjustments, lenses, shutters, screens. Plates for various purposes, films, prevention of halation. Lighting, exposure, development. Paper of various kinds, printing, enlargement and reduction, blue printing and allied processes. Record photography, photogrammetry and photo-surveying. Photography in colour.

Lectures Fall term, and laboratory work both terms.

200. ILLUMINATION:—*G. R. Anderson.*

Department 4, II Year.

Principles of interior and street illumination. Artificial lighting of public and private buildings, etc.

SURVEYING.

205. SURVEYING:—*S. R. Crerar.*

Departments 1, 2, 3, 7 and 8, I Year; 1 hour per week; both terms.

The lecture course includes the general principles; surveying with the chain, the compass and chain and the transit and chain, and level, the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces, co-ordinate surveying, division of land, etc.

Text books:—Plane Surveying—Tracy; Theory and Practice of Surveying—Johnson and Smith.

206. FIELD WORK:—*S. R. Crerar, E. W. Banting.*
Departments 1, 2, 3, 7 and 8, I Year; 9 hours per week; first term.
This course comprises testing chains; practice in chaining; a complete survey of a piece of land with the chain and transit; keeping of field notes; the use of the transit and compass in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures, and otherwise computing areas. Instrumental work with level.

207. SURVEYING:—*W. M. Treadgold, E. W. Banting.*
Departments 1 and 2, II Year; 1 hour per week; both terms.
This course of lectures takes up in detail, simple, reverse and compound curves as applied to railroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work, and the main features of mine and hydrographic surveying.
Text books:—Henck, Searles, Allen (Field books for Engineers) Theory and Practice of Surveying—Johnson and Smith; Surveying—Breed and Hosmer.

208. FIELD WORK:—*W. M. Treadgold, E. W. Banting, S. R. Crerar.*
Departments 1 and 2, II Year; 9 hours per week; first term.
This course of instruction embraces all adjustments of the transit, minor problems in triangulation and traversing—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse and compound, profile levelling and plotting of profile.

209. SURVEYING AND LEVELLING:—*W. M. Treadgold, E. W. Banting.*
Department 1, III Year; 1 hour per week; both terms; Department 2, III Year; 1 hour per week; first term.
This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earthwork, overhaul, transition curves, laying out turnouts, frogs and switches, etc.
Also a discussion of trigonometric and barometric levelling.
Text books:—Field Engineering—Searles; Railroad Curves and Earthworks—Allen.

210. FIELD WORK:—*W. M. Treadgold, E. W. Banting, S. R. Crerar.*
Departments 1 and 2, III Year; about 9 hours per week; first term.
This includes adjustments of levels and determination of profile, cross sectioning and computation of earthwork of located line on ground and plotting of same; also cross sectioning by use of hand level. A complete stadia topographic survey is made and plotted. Micrometer work and plane table traverse are also taken up.

ADDITIONAL, FOURTH YEAR OPTIONS.

211. RAILWAY ENGINEERING:—*W. M. Treadgold.*

Department 1, IV Year; about 2 hours per week.

The object of this course is to make the student acquainted with the general principles of railroad and street railway engineering, and the subject will be studied from the standpoint of economic theory of location; train resistance; effect of grade, distance and curvature and rise and fall; maintenance of way; yards and terminals; tunnels, and street railway practice.

212. FIELD WORK:—*W. M. Treadgold.*

Department 1, IV Year; about 11 hours per week; first term.

The work consists of an original survey for a railroad some one or two miles in length, the work being conducted according to the most modern methods of location. Upon the completion of this work a contour map of the district surveyed is plotted in the drafting room and a line adjusted to it. This is staked out in the field, profiles taken and complete estimates of the cost of construction made.

213. SANITARY ENGINEERING.

Sanitary Chemistry (113).
Advanced Biology (63*a*).
Bacteriology (64).
Re-inforced Concrete (22).
Hydraulics (32*b*).
Miscellaneous Structures (24*a*).

Sanitary Engineering:—A lecture course of 1 hour per week, both terms, in which consideration is given to the problems of water supply and sewage disposal as viewed by the engineer. Some practice in the design of works from assumed data is afforded.

Reference books:—Sewage Disposal—Fuller; Public Water Supplies—Turneaure & Russell.

214. HIGHWAY ENGINEERING:—

Department 1, IV Year.

A lecture and laboratory course of about 8 hours per week, dealing with materials, design and construction of highways and pavements and the testing of various materials used in such work.

215. STRUCTURAL ENGINEERING:—

Students in Civil Engineering who desire to specialize in the subjects best fitting them for designing or constructing engineers on bridge-building or other analogous work, may do so by selecting the Structural Engineering Option in the fourth year. In addition to the obligatory subjects, the following lecture and laboratory courses are provided for those selecting this option:

Theory of Structures (16).
Strength and Elasticity of Materials (17)
Iron and Steel (23).
Reinforced Concrete (22).
Structural Design (51).
Mill Building Design (24).
Miscellaneous Structures (24*a*).

216. ARCHITECTURAL ENGINEERING:—

Architectural students desiring to give special attention to the structural design of buildings may do so by electing to take the Architectural Engineering Option in the fourth year. The following subjects, in addition to those required of all students in the fourth year in Architecture, are required:

Mill Building Design (24).
Architectural Design (48*a*).

MODERN LANGUAGES.

217. FRENCH:—*J. S. Will, H. S. McKellar.*

Required in Department 4, I and II Years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

218. GERMAN:—*G. H. Needler.*

Required in Department 6, all years; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

THESIS.

219. THESIS.

Required in all Departments, IV Year.

Each student is required to prepare a thesis of between six thousand and seven thousand words on a subject approved by Council. See circular of information.

VACATION WORK.

220. CONSTRUCTION NOTES. See special circular of information.

OUTLINE OF VACATION WORK

CONSTRUCTION NOTES.

II and III Years.

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures, machines or plants which may be of interest. Any object chosen should be represented and dimensioned in such a manner that it could be completely constructed from the notes as the only available information.

From students in Department 2, who have been actually engaged during the summer with Government or other approved geological survey parties, geological field notes will be accepted in lieu of construction notes.

MASTER OF APPLIED SCIENCE DEGREE.

1. A candidate for the degree of Master of Applied Science (M.A.Sc.) shall hold the degree of Bachelor of Applied Science (B.A.Sc.) of this University.
2. He shall spend not less than one academic year in attendance as a student, in the Faculty of Applied Science, on a course of study approved by the Council.
3. He shall present a satisfactory thesis on a subject approved by the Council.
4. He shall pass such examinations as the Council may decide.
5. The candidate must register at the beginning of the academic year.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering or the degree of Bachelor of Applied Science.
2. He shall have spent at least three years after receiving the diploma or the degree in the actual practice of the branch of engineering wherein he is a candidate for a degree.
3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.

4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree, the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

The candidate may be required at the option of the Examiners to undergo an examination in the subject of this thesis.

6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Examiners.

7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.

8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Examiners.

9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.

10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.

LABORATORY EQUIPMENT.

THERMODYNAMIC AND MECHANICAL LABORATORY.

The University in 1909 completed the erection of a large, well-equipped building for the accommodation of the steam, gas, mechanical and hydraulic laboratories. A more complete description of the laboratories has been published elsewhere, so that the present description is only intended to give the main features.

The part of the building set apart for thermodynamics and other mechanical work is the ground floor of a room 60 ft. x 155 ft. This room is lighted entirely from the roof in a very perfect way. A part of the space 40 ft. wide running the entire length of 155 feet is served by a 3-ton travelling crane and contains the following equipment:

50 h.p. Brown engine with separate jackets on both heads and barrel of cylinder.

Two-stage Rand air compressor having compound steam cylinders, each fitted with Meyer cut-off gear. The low pressure air cylinder has Corliss inlet gear.

30 h.p. high-speed Leonard tandem compound engine with shaft governor.

15 h.p. high-speed McEwen engine.

75 h.p. two-line compound Willans engine.

15 h.p. DeLaval turbine with special nozzles for condensing and non-condensing tests.

Two 15 h.p. Leonard engines with different types of valves, which are used for valve setting.

There are also two surface condensers with air pumps so arranged that any engine in the laboratory may be made to exhaust into the atmosphere through an open heater or into one of the condensers, the change from one arrangement to the other being accomplished in a few minutes without the aid of valves.

The laboratory further contains:

A 3 ton York refrigerating machine with tanks.

An Amsler transmission dynamometer.

Apparatus for testing injectors and steam pumps.

Numerous other pieces of apparatus and instruments.

The work on internal combustion engines and producers is performed on the following:

18 h.p. Canada suction gas producer.

14 h.p. National gas engine arranged for various compressions and points of ignition.

10 h.p. Fielding and Platt engine for city gas or coal oil, having various adjustments.

8 h.p. Otto gas engine.

6 h.p. marine gasoline engine.

Ericsson air engine.

Various accessories to above machines.

Steam for the laboratory is supplied by two 50 h.p. and one 100 h.p. Babcock and Wilcox boilers, the latter having an internal superheater. These boilers are located in a separate boiler room. They are used for experimental work only and are fitted up for testing. The gases pass up through two independent chimneys, and these have been arranged so that the draft and other conditions in the chimney at any point of its height may be examined.

In smaller work-rooms off the main laboratory are placed belt and oil testing machines, apparatus for testing the efficiency of gears and machines, and for experiments in the balancing of machinery.

HYDRAULIC LABORATORY.

The hydraulic laboratory occupies two floors each 40 feet x 112 feet, which are well lighted by large windows on the side and end.

The water for the experimental work is pumped through the various pieces of apparatus from a well by means of two turbine pumping units, both of which are driven by a Belliss and Morcom compound engine of 125 h.p. running at a speed of 525 revs. per minute. Both engine and pumps have been installed with a view to using them in experimental work as well as for supply of water for other apparatus used in the laboratory.

The pumping units are capable of delivering one cubic foot of water per second against heads of 250 feet and 300 feet respectively. These units are designed and connected up so that they may be run in series giving the above discharge at 550 feet head, or they may be run in parallel giving double the discharge at a lower head. Each pumping unit consists of two two-stage pumps mounted on a common base and driven by a single pulley, and the construction and piping are such that each two-stage pump may be driven separately or that all may be driven at once, discharging separately one cubic foot per second at about 125 feet head through each of four independent pipes, or else the pumps may be run in series or in parallel. The scheme is thus well adapted to laboratory work, and under the heads used on reaction turbines about six cubic feet per second may be obtained.

The laboratory further contains a large vertical steel tank 5½ feet diameter by 34 feet high with arrangements for the attachment of nozzles and other mouthpieces, etc. Connections are also arranged for reaction turbines, the tank acting as a reservoir.

The discharge from the turbines or nozzles is measured in a weir tank nearly 6 feet wide and 21 feet long, containing a contracted weir 4½ feet wide. This weir may be calibrated by two weighing tanks, each having a capacity of about 240 cubic feet.

There are three reaction turbines and two impulse wheels all ready for experiment, the power being measured by brakes and the water by weir or orifices. Amongst the reaction turbines may be mentioned the one designed and built by Escher Wyss & Co., specially for the laboratory.

Smaller orifice and weir tanks, each about 3 x 3 x 12 feet with necessary measuring tanks, are arranged for instruction in coefficients of various kinds and practice with weirs and orifices.

A Venturi meter and other meters, also an hydraulic ram and similar devices are available for testing, and good facilities have been arranged for investigating friction and other properties of pipes and fire hose.

For special investigations on turbine and centrifugal pumps, other pumps in addition to those already described have been arranged.

The basement of the laboratory contains an open trough 5 feet wide, about 110 feet long, with a large weir at one end. It is intended to use this trough for experiments on the flow in open channels, for measurements of large discharges by means of the weir, and for experiments with current meters and Pitot tubes.

Numerous pieces of smaller apparatus, together with all instruments required, have also been provided, and the laboratory equipment is believed to be very complete.

AERONAUTIC EQUIPMENT.

For the purpose of the scientific study of problems connected with aviation and the best design of aeroplanes, and also of all problems connected with the effect of wind pressure, a wind tunnel 4 ft. square has been installed in the Hydraulic Laboratory and equipped with the latest form of balance and all the necessary instruments.

The laboratory also contains a number of aeroplane engines of most modern type, both rotary and stationary, and a number of models; and also a complete Hispano Suiza aeroplane. These machines are available for inspection, and are of much help in studying the trend of development and design in the power plant of lightest weight.

DONATIONS TO THE THERMODYNAMIC AND HYDRAULIC LABORATORIES.

The following donations to the equipment of the laboratories have been made through the kindness of those mentioned:

50 h.p. Wheeler Surface Condenser, presented by Mr. F. M. Wheeler, New York.

Blake Feed Pump, presented by the manufacturers.

6-inch New American Turbine, presented by Wm. Kennedy & Sons, Owen Sound, Ont.

Two Crown Water Meters, presented by the National Meter Co., New York, through Mr. M. Warnock, Toronto.

Rock Drill, presented by Sullivan Machinery Co., New York, through Mr. A. E. Blackwood, '95.

Marine Gasoline Engine, presented by Canadian Fairbanks Co., Montreal.

Two engines with different types of valve, presented by Messrs. E. Leonard & Sons, London, Ont.

Bundy trap from American Radiator Co., through Messrs. Russell & Gifford.

Dunham steam trap from C. A. Dunham Co.

Sectional models of valves from American Radiator Co.

Sectional model Mason Reducing Valve by Russell & Gifford.

Tanks, etc., by John Inglis Co. Pressure Fan from Sheldons Ltd. Galt.

In addition to the above, other firms have materially assisted by offering apparatus at or below cost price, among whom may be specially mentioned, The Canadian Rand Drill Co., Sherbrooke, Quebec.

The following machines are gifts from the Royal Air Force:

Liberty Aeroplane Motor 400 h.p.
200 B. h.p. Siddeley Deasey Aero Engine..
120 h.p. Beardmore Aero Engine.
Curtis Engine (Sectional).
Hispano Suiza Aero Engine.
80 h.p. Le Rhone Rotary Engine.
Clerget Rotary Engine.
Gnome Monosoupape Engine.
Admiralty Rotary Engine 150 h.p.
Hispano Suiza Aeroplane.
Models of Engines, etc., and numerous spare parts.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is also an equipment consisting of one or more of the following optical instruments:—field glasses, microscopes, reading telescope, small comparators, spectrometer, various types of photometer, small focometer, cathetometer, polariscope, illuminometer, standard gas light testing bench, projecting lanterns, etc.

The photographic laboratory is supplied with a number of hand cameras for the use of students. There are also larger cameras for Departmental work, copying cameras, enlarging lanterns and a kinematograph camera, printer and projector, electric blue-printing machine and the necessary dark rooms.

The hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balance, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps.

The heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat, expansion apparatus, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve, and for determination of the absolute expansion of mercury, Callendar's apparatus for determination of the mechanical equivalent of heat.

The acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electropneumatic wind chest and standardized organ pipes and other accessories.

ELECTRICAL LABORATORIES.

Galvanometer laboratory.—The equipment of this laboratory is, in part, as follows: A set of D'Arsonval galvanometers conveniently located at tables about the laboratory, a set of resistance boxes for use with the same; measuring instruments, including ammeters, voltmeters, wattmeters, potentiometers and standard cells. Apparatus for the measurement of low resistance, including a ductor, and for high resistance, including a megger; several Carey Foster outfits and a Roller bond tester. There are also experimental lines for practice in locating faults, photometer outfits with rotating devices and various types of arc lamps.

Another room is fitted more especially for calibration of electrical instruments for alternating and direct currents. About one hundred and twenty portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances and a Wolff potentiometer, with which the portable instruments may be compared.

Machine laboratory.—This laboratory, occupying two large rooms, contains twenty-five dynamos and motors varying in capacity from two to twenty kilowatts, adapted for experiments illustrating the properties of compound, shunt and series dynamos and motors, arc machines, as well as the use of interpoles. Switch-boards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines.

This laboratory also contains two 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternators direct driven by motors, two 7½ kw. alternators, two rotary converters of 10 kw. and 5 kw. capacity, a 7½ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three-phase squirrel cage induction motors, Wagner single phase motor and unity power factor motor, Swedish General Electric variable speed motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase and single phase induction motors; also transformers, reactive coils, and other details, as in the direct current sections of the laboratory described above, for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with its load of six series arc lamps, a three-element oscillograph, for studying wave forms, a high potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

A motor generator set has been installed, comprising a 65 h.p. motor driving on the same shaft a 30 kw. 110 volt d.c. generator and a 30 kw. 60 cycle 110 volt alternator with direct connected exciter.

Appliances are also provided for the study of saturation and hysteretic properties of samples of iron and steel, and models for exercise in winding armatures.

High tension room. In a separate room with proper automatic devices for safety to the operator, there is installed a 20 K.W. transformer with a range of voltages up to 200,000 volts. Studies of insulators may be carried out. It is expected that the facilities for measurement of high voltage will shortly be improved by the installation of a sphere gap. Work with high frequency also is in contemplation.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The laboratory for quantitative analysis will

accommodate 48 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 36 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. A laboratory for fourth year students with accommodation for eight workers has been fitted up. Each of these laboratories has its own balance room adjoining furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. A calorimeter room has been equipped in the basement. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories, which are situated in the Chemistry and Mining building, are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a good set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switchboard connections to a 120 kw. d.c. generator which supplies the current required.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building. One has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet. Adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes for crucible fusions, various gas and oil furnaces both for crucibles and muffles, and two large brick muffle furnaces.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

METALLURGICAL LABORATORY.

This laboratory is on the basement floor of the Chemistry and Mining Building. The main room has a floor space of 1600 square feet.

Among the larger furnaces included in the equipment of the laboratory are a six hearth Wedge mechanical roasting furnace, the gases from which pass through Cottrell precipitating pipes 12 inches in diameter, and which are served with rectified current at 50,000 volts. There is also a gas fired muffle roasting furnace, a Steele-Harvey tilting furnace, a large resistance furnace for high temperature work, two water jacketed blast furnaces and a copper converter.

The laboratory has several small furnaces of various types. Facilities are provided for pyrometric work, for zinc retorting, for furnace gas analysis, for leaching of ores and for the electrolytic refining and precipitation of metals.

There is a laboratory for the testing of clays equipped with grinding pan, ball mill, presses, gas fired and oil fired kilns.

MILLING AND CONCENTRATING LABORATORY.

A detached building, 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with electric power from the central plant, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundations, Challenge ore feeder, amalgamating plates, Wilfley table, a clean-up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15-horsepower motor.

The concentrating part consists of a set of five revolving trommels for wet screenings, four three-compartment jigs, a trough classifier delivering three products, and two revolving buddles, Wilfley Slimer, Deister Slimer, Richard's Pulsating Classifier, Richard's Pulsating Jig, a dry sizer, besides experimental apparatus of various kinds for experimenting on the falling rates of ore particles, the settling of slimes, surface tension action in oil and flotation methods, etc. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by electric motors.

The lower floor has been fitted up for lixiviation work with apparatus for the treatment of sands and slimes, different types of filter press, vacuum plant agitators, etc.

The plant throughout is intended mainly for teaching and experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore. Tests can also be made on lots of one to ten tons.

The other part of the milling building with 72 feet x 17 feet floor space and 15 feet high is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling

and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space is furnished with a magnetic separator of the Rowan-Wetherill type, driven by its own motor.

STRENGTH OF MATERIALS LABORATORY.

This laboratory is intended for the scientific and commercial testing of materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking, and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single lever-machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inches in diameter.

A hand power torsion machine of simple mechanical construction, specially designed for the testing of short shafts of a maximum diameter of one inch.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inches in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inches in length.

An Olsen compression micrometer of standard type.

A 20,000 pound Olsen, hand power, wire testing machine, specially fitted for testing wooden columns with both fixed and pivoted ends.

A Riehle abrasion cylinder, built to the standard required by the National Brickmakers' Association, adopted in 1901.

A Berry strain-gauge for spans of 3 inches and 8 inches.

A Nalder dividing engine. This may be used either for the precise division of scales or for the calibration of instruments intended for refined measurements.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Martens, Unwin, Ames, Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micrometers, telescopes and reflectors, voltmeters for the determination of metallic contact, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

HIGHWAY MATERIALS LABORATORY.

This laboratory is equipped for carrying out investigations in the various materials employed in highway construction and maintenance, and comprises the following:

Page impact machine for testing the toughness of road materials.

Diamond core drill for preparing specimens for the toughness test.

Deval abrasion machine for testing the resistance to wear of road materials.

Cementation testing apparatus (Page type) for determining cementing properties of road materials.

Jaw crusher (Mitchell type) for crushing rock for various tests.

Power driven agitator with sieves for the mechanical analysis of sand, gravel and crushed rock.

The laboratory is also equipped with the appliances necessary for examining physical properties:—volatilization, specific gravity, viscosity, melting point, penetration, ductility, etc., of oils, asphalts, tars and other bituminous mixtures used in road construction and maintenance.

LABORATORY OF ONTARIO BOARD OF HEALTH.

Through the courtesy of the Secretary of the Provincial Board of Health for Ontario the facilities of the excellently equipped laboratory which the Board maintains at Stanley Park have, with certain conditions, been placed at the service of the University for the investigation of problems of interest to the sanitarian and the sanitary engineer. The equipment consists of various types of sewage sedimentation tank, sewage filter, sewage measuring devices, aerators, sterilizing appliances and a complete and representative plant intended for the filtration and sterilization of water by practically all known methods.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables, and other appliances necessary in making the usual physical tests of a Portland cement. It is also supplied with completely equipped cabinets for individual work. In addition there are the following:

A 2,000 lb. Riehle machine fitted for either tension or compression.

A 2,000 lb. Riehle shot machine for tension.

A 2,000 lb. Fairbanks shot machine for tension.

A 1,000 lb. Olsen automatic shot machine fitted for tests in either tension or cross breaking.

An Olsen soapstone moist closet of modern design.

METROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which is carried on the instruction in practical field operations as detailed elsewhere.

A small laboratory is also established in the basement of the observatory described below, containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10-foot comparator, an invar base measuring apparatus, a Kater's pendulum with vacuum chamber, a level trier, micrometer microscopes, etc.

The geodetic observatory in connection with this department is used for the instruction of students of the Fourth Year in taking observations for time, latitude, longitude, and azimuth by the precise methods used in connection with a geodetic survey. It contains a 10-inch theodolite and zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8-inch theodolite by Cooke; two electro-chronographs; a Howard astronomical clock; a Dent sidereal clock; a Dent sidereal break-circuit chronometer; a wireless receiving instrument; arithmometers, etc.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

In the Chemistry and Mining building on College Street the University possesses a modern laboratory for Geology and Mineralogy.

Courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. For students in Mining a laboratory course in the interpretation of geological maps and sections is provided. Typical mining regions are studied in detail and an opportunity is afforded for the examination of specimens illustrating economic geology.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in cartography and geological surveying.

The departments possess 28 petrological microscopes and 5 of other types, so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining buildings for the housing of such periodicals and other literature of the University Library as is of special interest to the students of this faculty.

The University Library is contained in a building of its own, situated on the east side of the campus, that lies to the south of the Main Building. All students who have paid a library fee to the Bursar of the University are entitled to the privileges of the Library. Besides Reading Rooms the Building contains Departmental Studies, which may be used as study-rooms by honour students in the various branches and in which the Professors hold seminary courses. The Library is opened at 8.45 every morning and remains open until 5.15 in the afternoon (6 p.m. during the second term). Books may not be taken out of the building during the daytime, but are lent for the night shortly before the hour of closing, to be returned the following morning before 10 o'clock. Books not in general demand may, on special application, be borrowed for a longer period. Failure to return a borrowed book at the proper time and other breaches of the regulations are punishable by fine or suspension from the privileges of the Library.

ROYAL ONTARIO MUSEUM.

Archaeology, Geology, Mineralogy, Palaeontology, Zoology.

Students of the University in all departments are recommended to avail themselves of the privileges of the Museum, which, although under separate control, is intimately connected with the work of the University.

The Museum is open on all week days from 10 a.m. to 5 p.m. The admission is free to the public on Tuesday, Thursday and Saturday. On other days an admission fee of fifteen cents is charged.

By a resolution of the Board of Trustees all regular students of the University may be admitted free on all days of the week by presenting their card of registration.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1918-1919.

President.....D. K. C. Strathearn
Vice-President.....G. C. Bennett
Treasurer.....C. G. R. Armstrong
Corresponding Secretary.....N. H. Illman
Recording Secretary.....C. M. Beck
Curator.....P. J. Culliton
Fourth Year President.....J. E. Hess
Third Year President.....R. D. Keenleyside
Second Year President.....F. W. Dunton
First Year President.....F. S. Spence
Civil Club Representative.....E. C. Cowan
Mining Club Representative.....J. C. E. Skinner
Electrical Club Representative.....J. M. Harkins
Chemical Club Representative.....A. R. Clarry
Architectural Club Representative.....W. A. Mollard

The Society meets every second Wednesday during the academic year (except April), beginning with the third Wednesday in October. Papers are read, and discussions are held on engineering subjects. The Society publishes a journal monthly during the year, containing the best papers read at the meetings. A supply department is conducted by the Society, on a co-operative plan, through which instruments, drafting supplies, stationery, etc., may be purchased at a low cost. The Society is divided into five clubs for the purpose of affording a medium of study of matters relating in particular to the different departments of engineering.

THE INDUSTRIAL CHEMICAL CLUB.

Officers for 1918-1919.

Hon. President ..... Dean Ellis
Hon. Vice-President ..... Dr. M. C. Boswell
Chairman ..... J. H. Forman
Vice-Chairman ..... A. Hambleton
Fourth Year Representative ..... A. R. Clarry
Third Year Representative ..... H. B. Cody
Second Year Representative ..... T. M. Barry
First Year Representative ..... J. J. Crawford
Secretary-Treasurer ..... A. D. R. Fraser
Curator ..... W. R. Richardson

The object of the Chemical Club is to promote the study of industrial chemistry and chemical engineering. Illustrated lectures, preceded by an informal dinner and a short musical programme, are held fortnightly, and on the following day an excursion is made to industrial chemical concerns located in the city or vicinity.

MECHANICAL AND ELECTRICAL ENGINEERING CLUB.

1918-1919.

Chairman ..... J. M. Harkins
Vice-Chairman and Fourth Year Representative ..... H. Rose
Secretary and Third Year Representative ..... H. E. Preston
Treasurer and Second Year Representative ..... A. C. Blue
Curator and First Year Representative ..... C. S. Scadding

The Club meets every Thursday during the academic year for the discussion of papers relating to mechanical and electrical engineering problems.

CIVIL ENGINEERING CLUB, 1918-1919.

Chairman ..... E. C. Cowan
Fourth Year Representative ..... H. L. Dowling
Third Year Representative ..... R. Harrison
Second Year Representative ..... W. D. Coulter
First Year Representative ..... L. J. Robinson

The Club is addressed during the academic year by practising engineers on modern methods and problems in civil engineering.

MINING AND METALLURGICAL ENGINEERING CLUB

Officers for 1918-1919.

Honorary President.....Prof. G. A. Guess
President.....J. C. E. Skinner
Vice-President.....E. A. Rolph
Secretary-Treasurer.....H. M. Shepard
Chairman Accommodation Committee.....C. M. Beck
Chairman Subject Matter Committee.....G. M. Thorpe
Chairman Plant Visiting Committee.....C. W. Coo

The Club is affiliated with the American Institute of Mining Engineers, which, in addition to other services rendered, takes a direct interest in obtaining positions for the students during the summer. The object of the Club is to hold frequent meetings at which prominent men in the mining and metallurgical industries speak, and to visit plants.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION

DIRECTORATE, 1919-1920.

Honorary President.....R. A. Falconer, D.Litt., LL.D.
President.....Prof. M. A. Mackenzie
Vice-President.....S. A. Moote
Secretary-Treasurer.....T. A. Reed
Physical Director.....Dr. J. W. Barton

Directors for 1919-1920:

Prof. C. H. C. Wright, Hugh Gall, B.A.Sc., F. C. A. Houston, Wendell Holmes, D. A. C. Martin, W. A. Dafoe, D. J. Sinclair

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL CLUB OF THE UNIVERSITY OF TORONTO.

Officers for 1919-1920.

Honorary President.....Prof. C. H. C. Wright
Honorary Vice-President.....C. E. Gage
President.....Wendell Holmes
Secretary.....F. A. Ireland
Manager senior team.....Dan Maclean
Captain senior team.....To be elected

The Mulock Cup, which was presented by Sir Wm. Mulock, M.A., LL.D. to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE UNIVERSITY OF TORONTO.

Officers for 1919-1920.

Honorary President.....Prof. C. B. Sissons
President.....A. L. Huether
Secretary-Treasurer.....A. E. Effrick
Manager.....S. W. Archibald
Captain.....To be elected

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

HOCKEY CLUB OF THE UNIVERSITY OF TORONTO.

Officers for 1919-1920.

Honorary President.....Dr. A. B. Wright
President.....W. A. Dafoe
Vice-President.....P. F. McIntyre
Manager senior team.....J. G. Countryman
Captain.....To be elected
Secretary.....W. M. Gordon

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem. Inst. C.E.

TRACK CLUB.

Officers for 1919-1920.

Honorary President.....Dr. W. E. Willmott
President.....Dr. W. E. Brown
Secretary-Treasurer.....G. H. S. Ramsay

BOXING AND WRESTLING.

Honorary President.....Prof. A. T. DeLury
President.....L. R. Dodds
Secretary-Treasurer.....J. E. T. Musgrave
Acting Manager.....F. C. A. Houston

FENCING.

Honorary President.....Prof. R. E. L. Kittridge
President.....L. D. Carver
Secretary.....L. J. Miller

GYMNASIUM CLUB.

Honorary President.....G. A. Keith
President.....R. D. Huestis
Vice-President.....R. C. Hays
Secretary and Manager.....J. B. Ridley

LACROSSE.

Honorary President.....Dr. Frank Park
President.....W. A. Dafoe
Secretary and Manager.....Wendell Holmes

TENNIS.

Honorary President.....Prof. Hook
President.....W. B. Dickson
Secretary.....D. A. Martin

SWIMMING.

Honorary President.....Dr. Kirkwood
President.....W. J. Hambly
Secretary-Treasurer.....J. J. Martin

HARRIER.

Honorary President.....Capt. J. H. Adams
President.....P. J. Dykes
Secretary and Manager.....J. Geoghegan

BASKETBALL CLUB.

Season 1919-1920.

Honorary President.....Dr. Clemens
President.....C. H. Urquhart
Secretary-Treasurer.....E. J. L. Coles
Manager.....To be elected

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

Officer Commanding.....Major L. L. Anthes.
Captain.....Valentine Boyd.
Lieutenant (seconded overseas).....A. J. S. Davidson.
" " " .....E. Pepler.
" " " .....L. Drummond.
" " " .....E. F. Lynn, M.C.
" " " .....F. A. McGivern.
" " " .....T. R. Young.
" " " .....T. R. Loudon
" " " .....J. B. Heron.
" " " .....Hugh Gall.
" " " .....T. A. Hyam.
" " " .....J. W. Monds.
" " " .....R. S. Stone.
" " " .....H. P. Frid.
" " " .....H. B. Duthie.
" " " .....A. L. Mieville.
" " " .....L. W. Klingner, M.C.
Medical Officer.....Major J. W. S. Barton
Chaplain.....Capt. T. G. Wallace.

FACULTY OF APPLIED SCIENCE.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y.M. C. A., which is a Federation of the Associations of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

FACULTY OF APPLIED SCIENCE.

VARSITY REPRESENTATIVES

Senior.....A. Hambleton
Junior.....A. D. R. Fraser

UNIVERSITY OF TORONTO C.O.T.C.

Staff.

Lieut.-Colonel.....W. R. Lang.
Major.....A. D. LePan.
Major.....C. V. Massey.
Adjutant.....G. N. Bramfitt.
Quartermaster.....Lieut. C. H. C. Wright.
Paymaster.....Lieut. T. A. Reed.
Medical Officer.....Capt. J. W. Barton.
Musketry Officer.....Capt. F. B. Kenrick.

Establishment: 12 Companies and 1 half Company.

UNIVERSITY OF TORONTO, STUDENTS' ADMINISTRATIVE COUNCIL.

President Engineering Society.....D. K. C. Strathearn
Fourth Year Representative.....J. E. Hess
Third Year Representative.....R. D. Keenleyside
Second Year Representative.....F. W. Dunton
First Year Representative.....F. S. Spence

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from six dollars a week upwards for comfortable lodging with board; or rooms may be rented at a cost from two dollars and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

UNIVERSITY RESIDENCES.

By the generosity of Mr. and Mrs. E. C. Whitney and other friends, the University can now offer to some hundred and fifty men the peculiar advantages of residential life and excellent accommodation within its own grounds. The Residence, opened in November, 1908, consists of three Houses situated on the north side of Hoskin Avenue, opening upon a quadrangle, the fourth side of which is formed by Devonshire Place. They stand about two hundred yards to the north of University College and of the University Dining Hall and close to the University Gymnasium and Athletic Field. The buildings are known as the South, East and North Houses.

Each House contains twenty-four single rooms, one single suite, one double room and eleven suites, a suite comprising a study and two bedrooms. A large room in each building, with an open hearth and a library has been set aside as a common room. A lavatory with hot and cold shower baths is provided for every eight men. The buildings are heated by steam and lighted by electricity.

The University supplies the table, chairs, book-case, chiffonier, bed, mattress, pillows, linen and window shades for each room; it is prepared to furnish a drop-light for a nominal rental.

Each occupant is charged $3.00 room-rent per week, payable to the Bursar four weeks in advance. The charge for each single suite is $4.00 per week. These charges cover heat, light, house-service, house-laundry, and the use of the telephone. There is no separate dining hall connected with the Residence, but board may be obtained at the adjacent University Dining Hall for $4.50 per week.

Applications for rooms must be made in writing to the Secretary of the Residence Committee (address the Registrar's Office) and must be accompanied by a deposit of $5.00. This deposit will be returned if the application be not granted, and will be forfeited if a room is assigned to the applicant and not taken by him, unless notice of his refusal of the room

be received by the Secretary in writing before September 8th. It will be returned in full at the end of the College year if the room key be given back and the room and furniture left in a satisfactory condition. The following principles govern the allotment of rooms: (i) In order to be assigned a room in the Residence, either before or during the session, a student must have obtained standing at the previous spring examination, with not more than *one* condition against him. (ii) The rooms in each House will be distributed proportionately between the various Faculties and Years. (iii) A limited number of rooms will be reserved for members of the incoming First Year until September 18th. (iv) Applications will be considered in order of priority.

The University lays down three general rules, designed to prevent hazing, the use of intoxicants and gambling. The students in each House shall elect a House Committee, which is entrusted by the University with the making and enforcing of any other needed rules and with the maintenance of order. A member of the Faculty resides in each House to act as friend and adviser to the men in residence.

FACULTY OF APPLIED SCIENCE.

REGISTER OF STUDENTS 1918-1919.

First Year.

3 Ahara, E. V.....Toronto
1 Archibald, S. W.....Seaforth
7 Barbour, Miss J. E.....Meaford
7 Benson, W. R.....Toronto
6 Best, G. C.....Brussels
7 Bishop, W. V.....Kimberley
4 Blake, V. B.....Toronto
6 Bongard, G. R.....Toronto
6 Broughall, G. M.....Toronto
2 Brown, E. L.....Toronto
6 Buchan, J. E.....Sarnia
7 Burns, D.....Brantford
1 Byram, A. T.....Toronto
3 Bysshe, H. A...Greenfield, Mass.
2 Chambers, A. J.....Toronto
1 Clarke, T.....Toronto
7 Coles, F. B.....Brantford
2 Coo, C. W.....Toronto
7 Coulthard, H. S.,
Chefoo, N. China
6 Crawford, J. J.....Toronto
2 Crombie, J. K. B., St. Catharines
6 Day, G. A.....Guelph
6 Dilworth, H. M.....Toronto
3 Doran, J. Y.....Toronto
1 Dougall, C. H.....Hamilton
3 Evans, M. M.....Bradford
6 Everest, T. E.....Toronto
7 Fenwick, J. R.....Toronto
7 Fitzgerald, W. W.....Toronto
6 Fotheringham, D. T.....Toronto
7 Fuller, G. B.....Arkona
1 Gibbs, J. W. S.....Kincardine
7 Goodwin, J. E.....Toronto
6 Grant, W. J.....Toronto
7 Graves, H. P.....London
6 Gray, F. M.....Toronto
1 Greig, A. K.....Toronto
1 Guscott. A. G.....Toronto
6 Hamilton, C.....Toronto
3 Harlow, G. H.....Toronto
1 Hayman, H. G.....Toronto
6 Heatley, A. H.....Brampton
7 Heisey, K. B.....Markham
2 Henderson, G. C.....Tara
7 Henry, S. W.....Stratford
2 Horning, A. G.....Toronto
7 Howden, H. E.....Caledonia
6 Johnson, A.....Orillia
3 Kerr, H. H.....Seaforth
3 Kirkconnell, H. R.....Lindsay
3 Kirkconnell, J. R.....Lindsay
3 Kischel, F. W.....Toronto
3 Kischel, G. H.....Toronto
1 Langlois, W. L.....Toronto
2 La Ronde, H. J.....Toronto
6 Lindsay, A.....Dover Centre
7 McGrath, R. J...St. Catharines
1 McIntyre, V. H.....Toronto
6 McLaughlin, R. R.....Toronto
7 McLean, G. E.....Thornbury
7 McNiven, J. G.....Acton
3 MacAllister, J. S. E.....Toronto
6 MacDougall, H. A.....Toronto
2 Mackle, W. P.....Toronto
6 Mallett, G. S.....Toronto
7 Mayberry, J. S.....Strat ford
1 Maynes, C.....Toronto
7 Montemurro, M.....North Bay
3 Mummery, C. R.....Hamilton
3 Murphy, A. R.....Wardsville
4 Noxon, K. F.....Toronto
6 Parker, R. E.....Tavistock
6 Parker, R. R.....Stirling
6 Pearen, C. B.....Toronto
2 Perry, J. C.....Uxbridge
7 Porter, W. J.....Powassan
1 Powell, H. R.....Grenfell, Sask.
3 Powell, M. V.....Peterboro
1 Pratt, A. O.....Ottawa
1 Pratt, D. L.....Midland
7 Queen, G.....Toronto
1 Reynolds, W. M.....Aurora
6 Richardson, W. R.....Essex
1 Robinson, L. J.....Toronto
7 Scadding, S. C.....Toronto
6 Schatz, M. H.....Toronto
6 Schemnitz, D. A.....Toronto
7 Scott, R. K.....Pakenham
6 Sherk, W. S.....Sherkston
1 Siddall, K. C.....Islington
6 Spence, F. S.....Toronto
7 Spotton, J. G.....Harriston
3 Stewart, V.....Milestone, Sask.
3 Stuart, G. L.....Toronto
7 Thomlinson, J. F.....Toronto

2 Thorpe, G. M.....Toronto
6 Van Dusen, F. H.....Toronto
3 Werner, A. A.....Port Dover
6 Westren, J. H.....Toronto
3 Whiteside, J. J.....Little Britain
3 Wilford, H. J. D.....Lindsay
1 Williams, R. H.....Burlington
7 Williamson, R. J.....Toronto
7 Wilson, A. R. H.....Oshawa
6 Winter, L. A. G.....Toronto
3 Woelfle, E. J. .....Chesley
6 Wynne-Roberts, R. I....Toronto
7 Yack, W. L.....Walkerton

Second Year.

1 Augustine, W. P...Port Colborne
6 Barry, T. M.....Hamilton
2 Beck, C. M.....Penetang
5 Bell, J. C.....Seaforth
3 Blue, A. C.....Wallacetown
6 Brody, D.....Blyth
3 Chaikoff, S.....Toronto
5 Churchill, J. W.....Toronto
1 Coulter, W. D....Port Robinson
3 Crane, H. C.....Toronto
1 Culliton, P. J.....Stratford
2 Doner, G. B.....Stayner
7 Dunton, F. W.....Brampton
3 Eckert, F. R.....London
5 Elliot, C. R.....Toronto
6 Emory, V. H.....Toronto
5 Fair, H. A.....Toronto
5 File, R.....Toronto
7 Flynn, J. P.....Merritton
5 Fraser, A. D. R.....Toronto
4 Gallanough, R.....Toronto
7 Gardner, J. W. .....Hamilton
5 Goldstick, D.....Toronto
6 Gundy, J. V.....Windsor
5 Haberman, W.....Toronto
4 Hall, Miss J. M.....Toronto
4 Hall, R. W.....Brampton
3 Hamilton, J. B.,
Fort Qu'Appelle, Sask.
1 Hannan, B. T.....Toronto
6 Harrison, D. R.....Tamworth
7 Henry, S. E.....Stratford
7 Houston, F. C. A.....Toronto
3 Hulfish, B.....Toronto
6 Knight, H. A.....Guelph
5 Lailey, C. P.....Toronto
3 Laird, C. H.....Hamilton
1§Legate, J. H.....Owen Sound
4 Livingston, A. H.....Brantford
1 Mackenzie, A. P.....Toronto
1 MacLean, C. H.....Chesley
7 MacLean, H. K.....Toronto
3 Maunder, W. F.....Lindsay
4 Niece, H. P.....Preston
1 O'Brien, A. E.....Toronto
6 Phillips, J. F.....Toronto
1 Pinel, W. G.....Toronto
7 Playfair, L. I.....Lanark
7 Prendergast, R. M.....Toronto
5 Presgrave, R.....Toronto
2§Purdy, H. E.....Port Perry
1 Rayner, G. V.....Hamilton
1 Reid, G. G.....Toronto
2 Rolph, E. A.....Toronto
6 Schierholtz, O.....Elmira
8 Shepard, H. M.....Hamilton
3 Shortt, J. E. B.....Toronto
3 Stafford, M. C.....Toronto
3 Voaden, V.....St. Thomas
5 Weelands, J. E.....Owen Sound
7 Wilson, A. S.....Woodstock
1 Wimperly, C. C.....Oakville
6 Wingfield, A. H.....Hamilton
2 Wyllie, W. J. E. Kamloops, B.C.

Third Year.

1 Armstrong, C. G. R.....Merlin
1 Baker, G. H.....Toronto
1 Bennett, G. C.....Midland
7§Booth, F. W.....Toronto
7 Brimer, L. F....Winnipeg, Man.
3 Chambers, J. L.....St. Mary's
6 Cody, H. B.....Hamilton
5 Corman, H. E.....Caledonia
6 Dingman, A. H.....Toronto
6 Faill, J.....Stratford
2 Graham, C. W.,
Edmonton, Alta.
5 Hambleton, A.....Toronto
7 Hardie, R. C...Esquimalt, B.C.
1 Harrison, R.....Birch Cliff
4 Hill, Miss E. M.,
Strathcona, Alta.
7 Illman, N. H.....Chatham
1 Irvin, W. F.....Toronto
3 Keenleyside, R. D.....London

§ Returned soldier reviewing.

4 Kentner, Miss M. A.....Toronto
6 Kerman, H. C.....Toronto
7§Little, H. B.,
New Westminster, B.C.
1 McEachern, K. J.....Alvinston
6 McLean, B. M.....London
7 McLellan, J. D.....Toronto
7 Mitchell, M. H....South Oshawa
1 Paterson, E. L.....Blantyre
7 Preston, H. E.....Midland
7 Pullan, E.....Toronto
7 Resnik, M. M...Winnipeg, Man.
1 Riehl, W. H.....Stratford
1 Salisbury, E. A.....Toronto
2 Skinner, J. C. E.....Bradford
6 Soehner, H. C.....Stratford
7 Stewart, A. L.....Kirkton
1§Wait, G. E.....Ottawa
7 Wilson, A. E.....Port Perry
7 Young, H. G.....Scarboro Jct.

Fourth Year.

7 Brown, W. D....Forester's Falls
1 Browne, W. J...St. John's, Nfld.
1 Caldwell, H. J.....Toronto
3 Campbell, T. W...Smith's Falls
5 Clark, J. E.....Toronto
6 Clarry, A. R.....Locust Hill
1 Cowan, E. C....Winnipeg, Man.
1 Dowling, H. L.....Toronto
7 Durand, R. A.....Toronto
1 Edmonds, C. W.....Simcoe
6 Forman, J. H.....Grimsby
7 Harkins, J. M.....Toronto
7 Hess, J. E.....Zurich
1 Hopper, G. H.....Toronto
1 Johnston, S. H.....London
1 Kearns, N.....Toronto
3 Lesperance, L. J.....Essex
1 MacIntyre, W. B.....Belmont
1 MacNicol, N.....Toronto
1 Matthews, F. J.....London
4 Mollard, W. R.....Toronto
4 McAvoy, O. H.....Stouffville
1 McColl, J. R.....Caledonia
1 Norwich, H. B.....Toronto
3 Park, R. T.....Peterboro
7 Reed, H.....Toronto
7 Reid, W. M.....Vinemount
7 Rose, H.....Sarnia
1 Snow, G. B.....Toronto
1 Strathearn, D. K. C.....Midland
6 Swinnerton, A. A.....Toronto
7 Tennyson, A. L.....Port Perry
7 Thomas, A. M.....Toronto

SPECIAL SESSION, FEBRUARY 1ST TO JULY 1ST, UNDERTAKEN FOR THE BENEFIT OF STUDENTS RETURNED FROM ACTIVE SERVICE.

First Year.

1 Chater, W. N.....Toronto
1 Cook, R. H. B. .....Aurora
6 Dignam, H. M.....Toronto
7 Duncan, W. C. C.....Toronto
3 Evans, G. F.....Bradford
1 Everson, S. F.....Oshawa
6 Fair, A. E. H.....Midland
7 Gower, J. L.....Toronto
6 Haldenby, C. N.....Toronto
1 Hawkins, W. J. H.....Islington
1 Helliwell, A. L.....Toronto
2 Henry, R. J.....Grimsby
1 Horning, H. G.....Hamilton
6 Laird, R. G.....Seaforth
6 McKeown, C. J. W..Mono Road
3 Magee, J. G.....London
6 Mahaffy, A. W...Sceptre, Sask.
6 Marks, G. R.....Toronto
1 Massey, D.....Toronto
6 Mellish, A. H.....Brantford
6 Meyer, H. B.....Brantford
6 Moor, H. H.....Toronto
7 Paul, R. J.....Sunderland
1 Pearce, W. R.....Toronto
6 Reynolds, H.....Toronto
7 Rosebrugh, D. W.....Toronto
1 Sanderson, A. C.....Toronto
4 Saunders, D. C.....Toronto
7 Strickland, D. D.....Toronto
7§Thompson, R. J.....Toronto
6 Wass, F. L.....St. Mary's
1 West, J. A.....Simcoe

§ Returned soldier reviewing.

Second Year.

2 Wilson, C. O.....Midland
3 Brickenden, W. T.....Toronto
4 Crowell, C. W.....Sydney, N.S.
7 Doherty, W. A.....Toronto
3 Dunn, E. A.....Chatham
2 Fawcett, T. C.....Gravenhurst
1 Gillespie, J.....Seaforth
7 Graham, H. C.....Elmvale
7 Hepburn, G.....Milton
7 Herold, W. H.....Shakespeare
8 Irwin, A. L.....Toronto
7 Lawrence, A. M.....Toronto
7 Lyon, G. M.....Collingwood
8 McIntyre, P. F.....Perth
3 Macdonald, D. M., Edmonton, Alta.
1 Marsh, E. J.....Grimsby
1 Meader, J. C.....Toronto
1 Monteith, J. C.....Stratford
7 Murphy, C. J.....London
1 Parker, W. J.....Toronto
1 Pepler, S. H.....Toronto
7 Ratcliff, J. H.....Stouffville
1 Richardson, F. C. G.....Toronto
1 Smith, C. T.....St. Thomas
7 Stalker, W. D.....Simcoe
1 Steel, G. E.....Toronto
3 West, T. M.....Toronto
4 Wright, B. H.....Toronto

Third Year.

3 Centner, M. H.....Toronto
1 Dafoe, E. R.....Napanee
7 Dancey, W. A.....Goderich
1 Dustan, E. B.....Pictou, N.S.
7 Forster, C.....Kingsville
7 Hill, C. R.....Weston
3 Holland, U. C.....London
3 Hopkins, H. R.....Burlington
7 Huestis, R. D.....Toronto
1 Julian, F. T.....Malton
5 Musgrave, J. E. T.....Toronto
1§Shoebottom, L. R.....London
4 Thompson, C. C.....Toronto
7 Turnbull, A. G.....Galt
1 Ure, D. G.....Woodstock
3 Weir, M. L.....Toronto
7 Welsman, T. S.....Toronto

§ Returned soldier reviewing.

STUDENTS OF OTHER FACULTIES TAKING INSTRUCTION IN ASSAYING, SURVEYING, ETC.

Gledhill, T. L.....Kincardine
Hurst, M. E.....Kerrisdale, B.C.
Quinn, Miss E. L.....Kincardine
Stewart, Miss B. H.....Toronto
Thomson, Miss A. E.....New York, N.Y.

Summary.

First Year Students	108
Second Year Students	61
Third Year Students	34
Fourth Year Students	33
Students of Other Faculties	5
	241

Special Session.

First Year Students	33
Second Year Students	27
Third Year Students	17
	77

Scholarship.

Awarded by the Boiler Inspection and Insurance Co. of Canada for General Proficiency in the Third Year in Mechanical Engineering.

1912. A. S. Anderson
1914. C. G. Davey
1913. E. D. W. Courtice
1915. L. L. Youell
1916. A. M. Snider
1917. W. D. Robertson
1918. T. W. Campbell

Degree of Master of Applied Science (M.A.Sc.).

1915. Avery, C. R.
1916. Dobson, W. P.
1914. Murdie, W. C.
1916. Parker, G. C.
1915. Parkinson, N. F.
1915. Robertson, C. S.
1915. Rolfson, O.
1915. Treloar, G. E.

PROFESSIONAL DEGREES AWARDED SINCE 1910.

Degree of Civil Engineer (C.E.).

1915. Bennett, G. A.
1915. Challies, J. B.
1913. Dallyn, F. A.
1915. Davison, A. E.
1914. Gillespie, P.
1914. Hill, S. N.
1914. Hogg, T. H.
1913. James, E. A.
1916. Johnston, C.
1916. Johnston, J. T.
1913. Marrs, C. H.
1915. Smith, A.
1917. Smith, W. C.
1915. Stayner, D. S.
1918. Sutherland, C. C.
1911. Swan, W. G.
1917. Taylor, Thos.
1917. Townsend, C. J.
1916. Watson, M. B.
1914. Young, C. R.

Degree of Mining Engineer (M.E.).

1912. Burwash, L. T.
1915. Campbell, A. D.
1913. Forbes, D. L. H.
1910. McMillan, J. G.
1915. Neilly, B.

Degree of Mechanical Engineer (M.E.).

1916. Acres, H. G.
1915. Campbell, A. M.
1913. Christie, A. G.
1913. Darling, E. H.
1913. Manson, G. J.
1913. Smart, R. S.
1918. Watson, M. B.

Degree of Electrical Engineer (E.E.).

1913. Mitchell, P. H.
1915. Palmer, C. E.
1914. Sara, R. A.

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

Graduating departments are represented as follows:

1. Civil Engineering.
2. Mining.
3. Mechanical.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical.
8. Metallurgical.

Up to and including 1911, three represented the combined departments of Mechanical and Electrical Engineering.

1881.

1. J. L. MORRIS, C.E., O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.

1882.

1. D. JEFFREY, Windsor, Missouri
Contractor.
1. J. H. KENNEDY, C.E., O.L.S., Vancouver, B.C.
Chief Engineer, Vancouver, Victoria and Eastern Ry.
1. J. MCAREE, B.A.Sc., D.T.S. (deceased).

1883.

1. D. BURNS, O.L.S., A.M.E.I.C. (deceased).
1. G. H. DUGGAN, M.E.I.C., Lachine, Que.
Vice-President and Chief Engineer, Dominion Bridge Co., Ltd.
1. J. W. TYRRELL, C.E., D.L.S., Hamilton, Ont.
Tyrrell & MacKay, Consulting Engineers and Surveyors.

1884.

1. W. C. KIRKLAND (deceased).
1. J. MCDOUGALL, B.A. (deceased).
1. A. R. RAYMER, Pittsburgh, Pa.
Assistant Chief Engineer, P. & L. E. Ry.
1. JAMES ROBERTSON, O.L.S., Toronto, Ont.
Commissioner, The Canada Co.
1. E. W. STERN, M. Am. Soc. C.E.,
On Overseas Service.

1885.

1. J. F. BLEAKLEY, Bowmanville, Ont.
Civil Engineer.
1. H. J. BOWMAN, D. & O.L.S., M.E.I.C., Kitchener, Ont.
Bowman & Connor.
1. E. E. HENDERSON, O.L.S., Henderson P.O., Me.
Civil Engineer.
1. B. A. LUDGATE, O.L.S., Pittsburgh, Pa.
Assistant Engineer, P. & L. E. Ry.
1. O. MCKAY, O.L.S., Walkerville, Ont.
Civil Engineer and Surveyor.

1886.

1. A. M. BOWMAN, D.L.S., Pittsburgh, Pa.
Pennsylvania Contracting Co.
1. E. B. HERMON, D. & O.L.S., Vancouver, B.C.
Assistant Engineer Vancouver Power Co.
1. ROBERT LAIRD, O.L.S., Haileybury, Ont.
Laird & Routley, Engineers and Surveyors.
1. T. KENNARD THOMSON, D.Sc., C.E., M.E.I.C., M.Am.Soc. C.E.,
Consulting Engineer. Hudson Terminal Building, New York
1. H. G. TYRRELL, C.E., A.M.E.I.C.,
Consulting Engineer. 817 Hinman Ave., Evanston, Ill.

1887.

1. J. C. BURNS (deceased).
1. A. E. LOTT, Los Angeles, Cal.
Consulting Railway Engineer.
1. A. L. MCCULLOUGH, O.L.S., B.C.L.S., A.M.E I.C., Nelson, B.C.
Engineer and Surveyor.
1. F. MARTIN, M.B., O.L.S.,
Physician.
1. C. H. PINHEY, D. & O.L.S., 110 Wellington St., Ottawa, Ont.
1. J. ROGERS, O.L.S., Mitchell, Ont.
Town Engineer.

1888.

1. J. F. APSEY, O.L.S., 3 N. Calvert St., Baltimore, Md.
Assistant Division Engineer, Baltimore Sewerage Commission.
1. W. T. ASHBRIDGE, C.E., 1444 Queen St. E., Toronto, Ont.
Engineer and Surveyor.
1. EDWARD F. BALL, A.M.E.I.C.,
335 Madison Ave., New York, N.Y.
Chief Assistant Engineer of Resurveys, Land and Tax Department, N. Y. Central and Hudson River Railroad.
1. D. B. BROWN, O.L.S., Quebec, P.Q.
Locating Engineer, Transcontinental Ry. (G.T.P.)
1. C. M. CANNIFF, Toronto, Ont.
Department of Soldiers' Civil Re-establishment.
1. H. J. CHEWETT, B.A.Sc., C.E., A.M.E.I.C.,
Cold Ash, Newbury, England
1. J. GIBBONS, D. & O.L.S., Ottawa, Ont.
Surveying Staff, Department of Interior.
1. R. MCDOWALL, O.L.S., C.E., A.M.E.I.C. Owen Sound, Ont.
Town Engineer.
1. G. W. MCFARLEN, O.L.S., Toronto, Ont.
City Engineer's Staff.
1. C. J. MARANI, Anacortes, Wash.
Designing and Consulting Structural Engineer for the Russia Cement Co.
1. G. R. MICKLE, B. A., Toronto, Ont.
Mine Assessor, Province of Ontario.
1. J. H. MOORE, O.L.S., Smith's Falls, Ont.
Town Engineer.
1. G. H. RICHARDSON, 21 Dunvegan Rd., Toronto, Ont

1888—*Continued.*

1. K. ROSE, Curry Bldg., Toronto, Ont.
Manager, Evans Rotary Engine Co. of Canada.
1. J. E. ROSS, D. & O.L.S., Kamloops, B.C.
Surveying Staff, Department of Interior.
1. C. H. C. WRIGHT, B.A.Sc., Toronto, Ont.
Professor of Architecture, University of Toronto.

1889.

1. B. CAREY, Toronto, Ont.
1. W. J. CHALMERS, Vanport, Beaver Co., Pa.
1. W. A. CLEMENT, M.E.I.C., South Vancouver, B.C.
Municipal Engineer.
1. G. F. HANNING, Toronto, Ont.
Divisional Engineer, C.N.R.
1. H. E. T. HAULTAIN, C.E., Asso. Mem., I.C.E., M.I.M.M., M.E.I.C., Toronto, Ont.
Professor of Mining Engineering, University of Toronto.
1. J. IRVINE (deceased).
1. D. D. JAMES, B.A., B.A.Sc., 6 Leuty Ave., Toronto, Ont
Surveyor.
1. F. X. MILL (deceased).
1. H. K. MOBERLEY, D. & S.L.S., Yorkton, Sask.
District Engineer and Surveyor.
1. T. R. ROSEBRUGH, M. A., Toronto, Ont.
Professor of Electrical Engineering, University of Toronto.
1. T. WICKETT, M.D., 25 Nightingale St., Hamilton, Ont.
Physician.

1890.

5. W. E. BOUSTEAD (deceased).
1. F. M. BOWMAN, O.L.S., C.E., Pittsburgh, Pa.
Blaw Steel Const. Co.
1. M. A. BUCKE, M.E. (deceased).
1. G. D. CORRIGAN (deceased).
1. J. A. DUFF, B.A. (deceased).
1. A. B. ENGLISH (deceased).
1. N. L. GARLAND, 76 Wellington St. W., Toronto, Ont.
1. J. HUTCHEON, O.L.S., Parliament Bldgs., Toronto, Ont.
Dept. of Lands, Forests and Mines.
1. W. L. INNES, O.L.S., C.E., Simcoe, Ont.
Manager, Dominion Canners, Ltd.
1. E. B. MERRILL, B.A., B.A.Sc., M.E.I.C., M. Am. Inst. E.E., *Engineer, H.E.P.C.* Toronto, Ont.
1. J. R. PEDDER (deceased).
3. R. A. ROSS, E.E., 80 St. Francois Xavier St., Montreal, Que.
Consulting Electrical and Mechanical Engineer.
1. T. H. WIGGINS, O.L.S., Saskatoon, Sask.
Civil Engineer and Dom. Land Surveyor.
1. W. J. WITHROW (died while on Active Service, 1917).

1891.

1. H. J. BEATTY, O.L.S., Pembroke, Ont.
Engineer and Surveyor.
1. T. R. DEACON, O.L.S., M.E.I.C., Winnipeg, Man.
President and General Manager, Manitoba Bridge & Iron Works, Ltd.
1. C. W. DILL, M.E.I.C., Winnipeg, Man.
Superintendent of Highways, Province of Manitoba.
5. O. S. JAMES, B.A.Sc., 6 Leuty Ave., Toronto, Ont.
1. A. LANE (deceased).
1. J. E. MCALLISTER, B.A.Sc., C.E., Hamilton, Ont.
Gen. Mgr. National Steel Car Co.
3. E. B. MERRILL, B.A., B.A.Sc., M.E.I.C., M. Am. Inst. E.E.,
Engineer, H.E.P.C. Toronto, Ont.
1. J. E. A. MOORE, C.E., Cleveland, O.
Marani & Moore, Civil and Mechanical Engineers.
1. W. NEWMAN, O.L.S., A.M.E.I.C., Winnipeg, Man.
Consulting Engineer and Contractor.
1. J. K. ROBINSON (deceased).
1. W. B. RUSSEL, 601 Standard Bank Bldg., Toronto, Ont.
Civil Engineer and Contractor.
1. G. E. SILVESTER, O.L.S., M. Am. Inst. M.E., Copper Cliff, Ont.
Chief Engineer, Canadian Copper Co.
1. H. D. SYMMES, Niagara Falls S., Ont.
Engineer and Contractor.

1892.

1. J. R. ALLAN, O.L.S., Renfrew, Ont.
1. T. H. ALISON, B.A.Sc., C.E., Bayonne, N.J.
Secretary and Chief Engineer, Bergen Point Iron Works.
1. A. G. ANDERSON. Port Dover, Ont.
Hardware Merchant.
1. C. FAIRCHILD, D. & O.L.S., 608 Tegler Blk., Edmonton, Alta.
Consulting Engineer and Surveyor.
1. J. B. GOODWIN, B.A.Sc., Niagara Falls, Ont.
Works Engineer, H.E.P. Development.
4. C. E. LANGLEY, Continental Life Bldg., Toronto, Ont.
Langley & Howland, Architects.
1. A. T. LAING, B.A.Sc., Toronto, Ont.
Secretary and Assistant Professor, Faculty of Applied Science, University of Toronto.
1. E. J. LASCHINGER, B.A.Sc., M.E., Johannesburg, Transvaal, S.A.
Hydraulic and Air Power Engineer, Central Mining and Investment Corporation.
5. W. L. LAWSON, B.A.Sc., Billings, Mont.
Asst. Gen. Manager, Great Western Sugar Co.
3. W. A. LEE, B.A.Sc. (deceased).
1. B. MCENTEE, B.A.Sc., 28 Queen St. E., Toronto, Ont.
Stationer.
3. C. G. MILNE, B.A.Sc. (deceased).
1. CHAS. H. MITCHELL, B.A.Sc., C.E., M.E.I.C., M. Am. Soc. C.E.,
On Overseas Service. Brigadier-General
1. N. L. PLAYFAIR, Vancouver, B.C.
1. J. M. PRENTICE (deceased).
1. J. A. ROSS, Cleveland, Ohio
Designer L. S. & M. S. Railway, Engineering Office.

1892—*Continued.*

1. ALBERT N. SMITH, Youngstown, Ohio
Engineer, Wm. B. Pollock Co.
1. R. W. THOMSON, B.A.Sc., M.E., Kamloops, B.C.
Dist. Mining Engineer for B.C.
3. A. V. WHITE, M.E., Ottawa, Ont.
Engineer, Commission of Conservation.

1893.

1. A. G. ARDAGH, Barrie, Ont.
Land Surveyor and Civil Engineer.
4.*H. F. BALLANTYNE, B.A.Sc., 2 West 47th St., New York, N.Y.
Architect.
1. G. L. BROWN, O.L.S., A.M.E.I.C., Morrisburg, Ont
Civil Engineer and Land Surveyor.
1.*L. C. CHARLESWORTH, D.L.S., Edmonton, Alta.
Deputy Minister of Public Works.
1. T. H. DUNN, D. & O.L.S., M.E.I.C., Ottawa, Ont.
Water Power Branch, Dept. of the Interior.
1. J. M. R. FAIRBAIRN, P.L.S., Westmount, Que.
Assistant Chief Engineer, C. P. R.
4.*W. FINGLAND, 334 Portage Ave., Winnipeg, Man.
Architect.
1. C. FORRESTER, Toronto, Ont.
1.*WALTER J. FRANCIS, C.E., M.E.I.C., M. Am. Soc. C.E., 260 St. James St., Montreal, Que.
Walter J. Francis & Co., Consulting Engineers.
3.*A. R. GOLDIE, Galt, Ont.
Manager, Goldie & McCulloch Co.
3. S. C. HANLY, Midland, Ont.
Midland Iron Works Co.
4.*J. KEELE, A.M., B.A.Sc., Ottawa, Ont.
Ceramic Engineer, Dept. of Mines.
1. J. T. LAIDLAW, B.A.Sc., M.E., Cranbrook, B.C.
Consulting Mining Engineer.
3. F. L. LASH, Bandoeng, Java
Manager, Electrical Supply Co., Board of Trade Building.
1. A. L. MCALLISTER, B.A.Sc.,
On Overseas Service.
1. T. J. MCFARLEN, Port Arthur, Ont.
Chemist, Antikokan Iron Co.
1. A. J. MCPHERSON, B.A.Sc., D.L.S., Regina, Sask.
Deputy Minister of Public Works for Sask.
1. A. F. MACALLUM, B.A.Sc., C.E., Ottawa, Ont.
Commissioner of Works.
1. W. T. MAIN, Silverton, Oregon
Division Engineer, C. & N. W. Ry.
1. V. G. MARANI, C.E., Cleveland, Ohio
Marani & Moore, Civil and Mechanical Engineers.
1. W. MINES, B.A.Sc., Chicago, Ill.
Mechanical Engineer, Hoover & Mason.
3.*J. M. ROBERTSON, Montreal, P.Q.
Consulting Engineer.

*Diploma with honours.

1893—*Continued.*

1. R. K. RUSSEL, 1001 Traders' Bank Bldg., Toronto, Ont.
Railway Contractor.
1.*F. N. SPELLER, B.A.Sc., Pittsburgh, Pa.
Metallurgical Engineer, National Tube Co.
1. H. R. SQUIRE, B.A.Sc., O.L.S. (deceased).
1. W. V. TAYLOR, O.L.S., A.M.E.I.C., Quebec, P.Q.
Quebec Harbour Commissioners.
1.*R. B. WATSON (deceased).

1894.

3.*R. W. ANGUS, B.A.Sc., *Mem. Am. Soc. M.E.* Toronto, Ont.
Professor of Mechanical Engineering, University of Toronto.
1. H. F. BARKER, Toronto, Ont.
1. A. T. BEAUREGARD, B.A.Sc., Darien, Conn.
1. A. E. BERGEY, Pittsburgh, Pa.
Assoc. Professor, Carnegie Inst. of Technology.
3. D. G. BOYD, Toronto, Ont.
Department of Lands and Mines, Parliament Buildings.
3. W. A. BUCKE, Toronto, Ont.
District Manager, Canadian General Electric Co.
1. J. CHALMERS, O.L.S., A.M.E.I.C., Edmonton, Alta.
Consulting Engineer, 13012 104th Avenue.
4.*J. A. EWART, B.A.Sc., 415 Booth Bldg., Ottawa, Ont.
Architect.
3. W. J. HERALD, B.A.Sc., 190 Whitney Ave., Sydney, N.S.
3. H. E. JOB, B.A.Sc., Hamilton, Ont.
Manager, Toronto and Hamilton Electric Co.
1. S. M. JOHNSON, B.A.Sc., B.C.L.S.
On Overseas Service.
3. A. C. JOHNSTON, B.A.Sc., M.E., Philadelphia, Pa.
Vice-President and Chief Engineer, The J. M. Dodge Co.
1. J. E. JONES, Toronto, Ont.
Street Cleaning Dept., City Hall.
3. N. M. LASH, Montreal, P.Q.
Chief Engineer, Bell Telephone Co.
1.*A. L. MCTAGGART, B.A.Sc., 703 Arch St., Pittsburg, Pa.
Mechanical Engineer.
3.*W. MINTY, B.A.Sc., Blackburn, Eng.
With Messrs. Yates & Thom, Ltd., Engineers.
C. J. NICHOLSON, Hamilton, Ont.
Assistant Engineer, Toronto, Hamilton & Buffalo Ry.
1. H. ROLPH, Montreal, Que.
Chief Engineer, John S. Metcalf Co., Ltd.
1. J. D. SHIELDS, B.A.Sc., Toronto, Ont.
Sewer Engineer, Staff of City Engineer.
1. ANGUS SMITH, C.E., O.L.S., A.M.E.I.C., Prince Albert, Sask.
City Engineer.
3. A. K. SPOTTON. Galt, Ont.
Chief Engineer, Goldie & McCulloch Engine Works.
3. R. T. WRIGHT, B.A.Sc., East Pittsburgh, Pa.
Engineering Department, Westinghouse Machine Co.

*Diploma with honours.

1895.

1. J. ARMSTRONG, B.A.Sc., LePas, Man.
Chief Engineer of the Hudson Bay Ry.
3. A. E. BLACKWOOD, 30 Church St., New York
Manager, New York Office, Sullivan Machinery Co.
1. E. J. BOSWELL, D.L.S., Montreal, Que.
With C. P. R.
3. G. BREBNER (deceased).
3. W. M. BRODIE, B.A.Sc.,
On Overseas Service.
3. L. L. BROWN, The Woolworth Bldg., New York
Vice-President, The Foundation Co.
4. R. J. CAMPBELL, Chicago, Ill.
Artist, Chicago Tribune.
3. A. W. CONNOR, B.A., C.E., 36 Toronto St., Toronto, Ont.
Bowman & Connor, Consulting Engineers.
1. J. S. DOBIE, B.A.Sc., O. & D.L.S., Thessalon, Ont.
President, O. L. S. Assoc.
1. F. W. GUERNSEY, Trail, B.C.
Consolidated Mining and Smelting Co.
4.*A. H. HARKNESS, B.A.Sc., Confederation Life Bldg., Toronto, Ont.
Consulting Structural Engineer, Harkness & Oxley.
3. H. S. HULL, B.A.Sc., Johnstown, Pa.
Structural Drawing, Cambria Steel Co.
3.*J. MCGOWAN, B.A., B.A.Sc., Toronto, Ont.
Professor of Applied Mechanics, University of Toronto.
3. W. N. MCKAY, Georgetown, Ont.
Manager of Bank of Hamilton.
3. H. L. MCKINNON, B.A.Sc., Cleveland, Ohio
Brown Hoisting Machinery Co.
1. W. W. MEADOWS, D. & O.L.S., Maple Creek, Sask.
Department of Public Works.
1. F. J. ROBINSON, D. & O.L.S. (deceased).
3. F. T. STOCKING, Toronto, Ont.
Hydro-Electric Commission.
3. R. C. C. TREMAINE, B.A.Sc. (deceased).

1896.

2.*J. W. BAIN, B.A.Sc., Toronto, Ont.
Professor of Chemical Engineering, University of Toronto.
2. L. T. BURWASH, M.E.,
On Overseas Service.
3.*G. M. CAMPBELL, Lynn, Mass.
Electric Co.
2. J. A. DECEW, B.A.Sc., McGill Bldg., Montreal, Que.
Chemical Engineer.
3.*H. P. ELLIOTT, B.A.Sc., E.E., London, Ont.
Consulting Electrical Engineer.
3. W. C. GURNEY, Toronto, Ont
Vice-President, Gurney Foundry Co., Ltd.
3.*H. V. HAIGHT, B.A.Sc., Sherbrooke, P.Q.
Chief Engineer, Canadian Ingersoll Rand Drill Co. Ltd.

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*Diploma with honours.

1896—*Continued.*

1. W. F. LAING (deceased).
3. R. R. LAWRIE (deceased).
3. C. MACBETH, B.A.Sc. (deceased).
3. J. A. MACMURCHY, 1315 Elm St., Wilkinsburg, Pa.
Chief Draftsman, Turbine Dept., Westinghouse Machine Co.,
1. T. MARTIN, B.A.Sc. Moose Jaw, Sask.
Assistant Divisional Engineer, C. P. R., Western Division.
3. R. R. SCHEIBE, Toronto, Ont.
Sales Manager, Brigdens, Ltd.

1897.

2. E. ANDREWES, B.Sc., A.M.I.C.E., Portmadoc, N. Wales.
Resident Engineer, Maenofferen Slate Quarry Co., Ltd.
2.*J. A. BOW, Chanaral, Chili, S. America.
c/o Andes Copper Mining Co.
1. H. S. CARPENTER, B.A.Sc., O.L.S., Regina, Sask.
Superintendent of Highways, Department of Public Works.
5. H. W. CHARLTON, B.A.Sc., New York, N.Y.
Patent Expert.
4.*E. A. FORWARD, A.M.E.I.C., Montreal, Que.
With Haney, Quinlan & Robertson.
3.*A. T. GRAY, B.A.Sc., Schenectady, N.Y.
Designing Engineer on Steam Turbines, General Electric Co.
3. W. A. B. HICKS, Philadelphia, Pa.
4. C. F. KING, 356 Main St., Winnipeg, Man.
The Great West Perm. Loan Co.
1. H. W. PROUDFOOT (deceased).
2.*A. H. A. ROBINSON, B.A.Sc., M.A.I.M.E., Ottawa, Ont.
Mining Engineer, Department of Mines.
4. W. F. SCOTT, Dunnville, Ont.
Structural Engineer and Consulting Architect.
3.*W. R. SMILEY, B.A.Sc., Cleveland, Ohio.
With Wellman-Seaver-Morgan Engineering Co.
2.*W. W. STULL, B.A.Sc., O.L.S., Sudbury, Ont.
Surveyor and Mining Engineer.
1.*M. B. WEEKES, B.A.Sc., D.L.S., Regina, Sask.
Department of Public Works.
1. E. A. WELDON, 711 McIntyre Block, Winnipeg, Man.
Investment Broker.

1898.

1. W. H. BOYD, B.A.Sc., Ottawa, Ont.
Geological Survey of Canada.
2. W. E. H. CARTER, B.A.Sc., Box 248, Wilkie, Sask.
Consulting Mining Engineer.
3. E. H. DARLING, M.E., A.M.E.I.C., Hamilton, Ont.
Resident Engineer, East Hamilton Plant, Hamilton Bridge Works Co.
1. W. F. GRANT, B.A.Sc. (deceased).
1. J. S. KORMANN, B.A.Sc., Toronto, Ont.
Manager, Kormann Brewing, Ltd.

*Diploma with honours.

1898—*Continued.*

3. J. E. LAVROCK, Vancouver, B.C.
Draftsman, Hermon & Burwell.
4. D. MACKINTOSH, B.A.Sc., B.Arch., Bennington, Vt.
Chief Superintendent F. M. Andrews & Co., Metropolitan Tower.
1.*F. W. MCNAUGHTON, O.L.S., Calgary, Alta.
C.P.R., Dept. of Natural Resources.
1. J. H. SHAW, O.L.S., North Bay, Ont.
Surveyor and Engineer.
3. A. E. SHIPLEY, B.A.Sc., Nelson, B.C.
Manager, Nelson Coke & Gas Co.
3.*F. C. SMALLPIECE, B.A.Sc., 122 Eleventh Ave. W., Calgary, Alta.
Chief Engineer, General Supplies Co.
1.*R. W. SMITH, P.L.S. (killed in action, France, 1916).
1.*J. A. STEWART, M.A., Toronto, Ont.
Chief Engineer, Toronto Structural Steel Co.
1.*H. L. VERCOE, 109 McCaul St., Toronto, Ont.
3. T. A. WILKINSON, New York, N.Y.
Statistician, Westinghouse Church Kerr Co.
3. D. A. WILLIAMSON, B.A.Sc., Ottawa, Ont.
Structural Steel Engineer, Dept. of Public Works.

1899.

3.*T. BARBER, Meaford, Ont.
Hydraulic Engineer, Chas. Barber & Sons.
2. J. T. M. BURNSIDE, B.A.Sc. (deceased).
3. L. B. CHUBBUCK, B.A.Sc., E.E., Hamilton, Ont.
Engineer, Canadian Westinghouse Co.
2. G. A. CLOTHIER, Stewart, B.C.
Mining Engineer and Surveyor.
1. C. COOPER, Carlyle, Sask.
2. R. W. COULTHARD, B.A.Sc., Toronto, Ont.
Department Soldiers' Civil Re-establishment.
3. J. A. CRAIG, B.A.Sc., Toronto, Ont.
Office of Willis Chipman, C.E.
2. J. C. ELLIOTT, Kelso, Ont.
3. W. E. FOREMAN, B.A.Sc., Pittsburgh, Pa.
Construction Dept., Westinghouse Electric and Mfg. Co.
3. E. GUY, B.A.Sc., Toronto, Ont.
3.*W. ALMON HARE, B.A.Sc., A.M.E.I.C., Toronto, Ont.
President, The Hare Engineering Co.
1. R. LATHAM, B.A.Sc., Hamilton, Ont.
Chief Engineer, T. H. & B. Ry.
3. W. MONDS, B.A.Sc.,
On Overseas Service.
1. J. PATTERSON, B.A., Toronto, Ont.
Physicist, Dominion Observatory.
3. A. S. H. POPE, B.A.Sc., Portland, Oregon
Pope & Wilcox, Electrical and Mechanical Engineers.

*Diploma with honours.

1899—*Continued.*

2. G. E. REVELL, B.A.Sc. (killed in action, France, 1915).
3.*E. RICHARDS, B.A.Sc., Ottawa, Ont.
Customs Appraiser.
3. G. A. SAUNDERS, Toronto, Ont.
Asst. Engineer, Hydro-Electric Commission.
1.*T. SHANKS, B.A.Sc., D.L.S., Ottawa, Ont.
Assistant Surveyor-General, Department of the Interior.
1.*D. C. TENNANT, B.A.Sc., Montreal, Que.
Struc. Eng., Dom. Bridge Co.
3. W. W. VANEVERY, Sault Ste. Marie, Ont.
City Engineer.
3. W. E. WAGNER, B.A.Sc., Springfield, Ill.
Manager, Smokeless Powder Division, Western Cartridge Co.
2. G. H. WATT, D.L.S., Ottawa, Ont.
Dominion Land Surveyor.
3. E. YEATES, London, Ont.
Manager, London Manufacturing and Machine Co.

1900.

1. J. L. ALLAN, M.E.I.C., Dartmouth, N.S.
Secretary, Dartmouth Development Co.
2. E. G. R. ARDAGH, B.A.Sc., Toronto, Ont.
Asst. Professor of Applied Chemistry, University of Toronto.
3. J. A. BAIN (deceased).
3. J. H. BARLEY, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Electric and Manufacturing Co.
2.*M. C. BOSWELL, M.A., Ph.D., Toronto, Ont.
Assoc. Professor of Organic Chemistry, University of Toronto.
1. L. T. BRAY, D. & O.L.S., Edmonton, Alta.
District Engineer.
3. J. CLARK, Toronto, Ont.
Turnbull Elevator Mfg. Co.
2. J. E. DAVISON, B.A.Sc., Winnipeg, Man.
Engineering Staff, Canadian Northern Ry.
3. E. D. DICKINSON, Schenectady, N.Y.
With General Electric Co.
3. G. W. DICKSON, B.A.Sc., Hawkesbury, Ont.
With Riordan Pulp & Paper Co.
2.*H. A. DIXON, B.A.Sc., M.L.S., Jasper, Alta.
District Engineer, Canadian Northern Railway.
2. C. H. FULLERTON, O.L.S., New Liskeard, Ont.
Engineer and Surveyor.
3. W. S. GUEST, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.
3. W. HEMPHILL, B.A.Sc., E.E., Buffalo, N.Y.
Superintendent, Cataract Power & Conduit Co.
2. S. E. M. HENDERSON, Toronto, Ont.
Canadian General Electric Co.
3. J. A. HENRY, Schenectady, N.Y.
Designing Engineer, General Electric Co.

*Diploma with honours.

1900—*Continued.*

2. H. S. HOLCROFT, B.A.Sc., D.L.S. (Died of wounds received in action, France, 1916).
3. H. A. JOHNSON, Toronto, Ont.
3. J. C. JOHNSTON, Boston, Mass.
Plant Inspector, Warren Bituminous Paving Co.
2.*J. A. JOHNSTON, B.A.Sc., Ignace, Ont.
Contractor.
2. R. E. MCARTHUR, Lethbridge, Alta.
2. J. G. MCMILLAN, B.A.Sc., M.E.,
On Overseas Service.
3. L. HAUN MILLER, Cleveland, Ohio
Sales Agent, Bethlehem Steel Co.
2. E. V. NEELANDS, B.A.Sc., New Guiana, S. America
Manager, Peters Mines.
1.*E. H. PHILLIPS, D.L.S., Saskatoon, Sask.
Phillips & Phillips, Civil Engineers and Surveyors.
2. J. R. ROAF, B.A.Sc.,
On Overseas Service.
3.*C. H. E. ROUNTHWAITE, Sault Ste. Marie, Ont.
Chief Draftsman, Algoma Central & Hudson Bay Ry.
2. H. W. SAUNDERS, B.A.Sc., Gary, W.Va.
Division Engineer, U. S. Coal & Coke Co.
1. A. TAYLOR, D. & M.L.S., Portage la Prairie, Man.
Engineer and Surveyor.
1. W. C. TENNANT, B.A.Sc. (deceased).
2. S. M. THORNE, B.A.Sc.,
On Overseas Service.
1. F. W. THOROLD, B.A.Sc., M.E.I.C., 2 Toronto St., Toronto.
F. W. Thorold Co., Ltd., Consulting Engineers and Contractors. [Ont.
1. H. M. WEIR, B.A.Sc., Saskatoon, Sask.
City Engineer's Office.
3. F. D. WITHROW, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.

1901.

1. R. H. BARRETT, B.A.Sc., O.L.S. (deceased).
3. W. G. BEATTY, Fergus, Ont.
Manager, Beatty Bros., Implement Manufacturers.
3. G. M. BERTRAM, Toronto, Ont.
Business Manager, Canadian Courier.
3. W. J. BOWERS (deceased).
3. E. T. J. BRANDON, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Com.
3. W. P. BRERETON, B.A.Sc., Winnipeg, Man.
City Engineer.
3. J. T. BROUGHTON, Columbus, Ohio.
Gen. Mgr., Factory Sales Co.
3.*W. G. CHACE, B.A.Sc., Winnipeg, Man.
Chief Engineer, Greater Winnipeg Water District.
3. A. G. CHRISTIE, M.E. Baltimore, Md.
Assoc. Professor of Mechanical Engineering, Johns Hopkins University

*Diploma with honours.

1901—*Continued.*

3. J. R. COCKBURN, B.A.Sc., A.M.E.I.C., Toronto, Ont
Associate Professor of Descriptive Geometry, University of Toronto.
1. W. A. DUFF, Moncton, N.B.
Engineer of Bridges, Intercolonial Ry.
2.*D. E. EASON, B.A.Sc., Peterboro', Ont.
Division Engineer, Trent Valley Canal.
1.*S. GAGNE, B.A.Sc. (deceased).
3. N. R. GIBSON, B.A.Sc., 550 Confederation Life Bldg., Toronto, Ont.
2. A. T. E. HAMER, Wahnapitae, Ont.
Engineering Staff, Canadian Northern Ry. Co.
1. C. HARVEY, B.A.Sc., D.L.S., C.E., B.C.L.S. Kelowna, B.C.
Consulting Engineer and Surveyor.
2. F. C. JACKSON, Seaforth, Ont.
3.*R. A. LAIDLAW, C.E. Houston, Texas
Engineer and Sales Agent, Trussed Concrete Steel Co.
3. W. C. LUMBERS, Calgary, Alta.
Engineering Staff, C. P. R.
2. A. C. MACDOUGALL,
On Overseas Service.
3. A. T. C. MCMASTER, B.A.Sc., Toronto, Ont.
Engineer and Contractor.
1. G. MACMILLAN, Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3.*H. G. MCVEAN, B.A.Sc., 3120 Rae Street, Regina, Sask.
2. W. C. MATHESON, Joliette, Que.
With Mackenzie-Mann & Co.
3. H. T. MIDDLETON, Englewood Cliffs, N.J.
2. J. L. R. PARSONS, B.A., D.L.S.,
On Overseas Service.
1. G. H. POWER, Winnipeg, Man.
Western Canada Rep. of Willis Chipman, C.E.
3.*H. W. PRICE, B.A.Sc., Toronto, Ont.
Associate Professor of Electrica lEngineering, University of Toronto
1. H. P. RUST, B.A.Sc., A.M.E.I.C., Philadelphia, Pa.
Plant Engineer, Wm. Cramps, Ltd.
3. M. V. SAUER, B.A.Sc., Winnipeg, Man.
Assistant Engineer, Greater Winnipeg Water District.
3. W. H. STEVENSON, B.A.Sc., Monadnock Block, Chicago, Ill.
Secretary, Power Plant Specialty Co.
1. R. D. WILLSON (deceased)

1902.

3.*H. G. BARBER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. W. J. BLAIR, B.A.Sc., D. & O.L.S., Calgary, Alta.
3. J. M. BROWN, Pittsburgh, Pa.
With Westinghouse Machine Co., Steam Turbine Dept.

*Diploma with honours.

1902—*Continued.*

2. W. G. CAMPBELL, Toronto, Ont.
Campbell & Lattimore.
2. A. R. CAMPBELL (deceased).
3. C. G. CARMICHAEL (deceased).
2.*W. CHRISTIE, B.A.Sc., Prince Albert, Sask.
Dominion Land Surveyor.
2. F. T. CONLON (deceased).
3. H. V. CONNOR, Hamilton, Ont.
Canadian Westinghouse Co.
2.*M. T. CULBERT (deceased).
2. R. CUMMING, Toronto, Ont.
Price, Cumming Brick Co.
1. W. E. DOUGLAS, B.A., 152 Bay St., Toronto, Ont.
Contractor.
3.*R. J. DUNLOP, Toronto, Ont.
With Canadian Westinghouse Co.
2. W. M. EDWARDS, B.A.Sc., Lethbridge, Alta.
Duff & Edwards.
3. W. ELWELL (deceased).
2. J. M. EMPEY, B.A.Sc., O. & D.L.S., Calgary, Alta.
Engineer and Surveyor.
2.*D. L. H. FORBES, M.E. Chuquicamata, Chili, South America.
Chief Const. Engineer, Chili Exploration Co.
1.*A. E. GIBSON, B.A.Sc., Toronto, Ont.
Roger Miller & Sons, Engineers and Contractors.
3. A. C. GOODWIN, Toronto, Ont.
With Hydro-Electric Power Commission.
3. C. P. HENWOOD, McKeesport, Pa.
Draftsman, National Tube Co.
3. D. M. JOHNSTON, Toronto, Ont.
With Hydro-Electric Power Comm.
2. R. H. KNIGHT, B.A.Sc., D.L.S., Edmonton, Alta.
Driscoll & Knight, Engineers and Surveyors.
5.*F. L. LANGMUIR, B.A.Sc., Ph.D., Toronto, Ont.
Chemist, M. Langmuir Mfg. Co.
3. A. H. MCBRIDE, B.A.Sc., Toronto, Ont.
Assistant Engineer, Hydro-Electric Power Commission.
1. A. L. MCLENNAN, D.L.S., London, Ont.
Department Soldiers' Civil Re-establishment.
3. J. T. MACKAY, Toronto, Ont.
3. J. F. S. MADDEN, Toronto, Ont.
Canadian General Electric Co.
3.*C. H. MARRS, C.E., Hamilton, Ont.
Hamilton Bridge Works.
3. P. MATHISON, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.
3. R. S. MENNIE, Pittsburgh, Pa.
With Crucible Steel Co. of America.
2. H. H. MOORE, D.L.S., A.M.E.I.C., Calgary, Alta.
Dominion Land Surveyor and Engineer.
1.*T. S. NASH, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
1. G. G. POWELL, B.A.Sc., Toronto, Ont.
Assist. City Engineer.

*Diploma with honours.

1902—*Continued.*

1.*W. F. RATZ, D.L.S. (deceased).
3. H. D. ROBERTSON, B.A.Sc., London, Ont.
Department Soldiers' Civil Re-establishment.
3.*D. SINCLAIR, B.A.Sc. (deceased).
2.*I. J. STEELE, D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3. W. H. SUTHERLAND, B.A.Sc., Montreal, Que.
Assistant Chief Engineer, Montreal Water and Power Co.
3.*THOS. TAYLOR, C.E. 494 Concord Ave., Toronto, Ont.
Des. and Const. Engineer, Bloor Street Viaduct.
2.*C. M. TEASDALE, Concord, Ont.
Surveyor.
3. A. A. WANLESS, Sydney Mines, N.S.
Asst. Engineer and Shop Supt. N. S. S. & C. Co.
3. H. J. ZAHN, B.A.Sc., 235 Calumet St., Detroit, Mich.

1903.

3. H. G. ACRES, Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Commission.
1. J. G. R. ALISON, Pittsburgh, Pa.
With Riter-Conley Mfg. Co.
3.*H. H. ANGUS, B.A.Sc., Toronto, Ont.
MacMullen, Riley & Durley, Consulting Engineers.
3. J. A. BEATTY, Peterboro', Ont
Morrow & Beatty, Contractors.
3.*J. BRESLOVE, Pittsburgh, Pa.
Allis-Chalmers Co.
2. J. H. BURD, O., D., S. & A. L. S., C.E., Saskatoon, Sask.
Engineer and Surveyor.
1.*E. L. BURGESS, D.L.S., Kamloops, B.C.
Burgess & Taggart, Surveyors and Engineers.
2. N. A. BURWASH, B.A.Sc., 26 Alvin Ave., Toronto, Ont.
1. F. F. CLARKE, D. & O.L.S., A.M.E.I.C.,
137 Sheldrake Blvd., Toronto, Ont.
2. C. L. COULSON, Welland, Ont.
Chief Engineer.
3.*A. E. DAVISON, B.A.Sc., C.E. Toronto, Ont.
Engineering Staff, Hydro-Electric Power Commission.
3. C. J. FENSOM, B.A.Sc., M.E., Hamilton, Ont.
Works Engineer, Otis-Fensom Elevator Co.
2.*E. O. FUCE, O.L.S., 84 King Street E., Toronto, Ont.
Engineer and Surveyor.
3.*F. A. GABY, B.A.Sc., Toronto, Ont.
Chief Engineer, Hydro-Electric Power Commission.
1. J. C. GARDNER, B.A.Sc., Niagara Falls, Ont.
Consulting Engineer.
3. R. E. GEORGE, Dover, N.H.
Electrical and Gas Engineer, The United Gas & Electric Co.
1.*P. GILLESPIE, B.A.Sc., C.E. Toronto, Ont.
Associate Professor of Applied Mechanics, University of Toronto.
1. W. A. GOURLAY, Victoria, B.C.
Chief Engineer, Dominion Govt.

*Diploma with honours.

1903—*Continued.*

2. J. F. HAMILTON, B.A.Sc., C.E., Lethbridge, Alta.
Hamilton & Young, Dominion Land Surveyors and Engineers.
2. G. S. HANES, B.A.Sc., O.L.S., North Vancouver, B.C.
2. F. Y. HARCOURT, B.A., Port Arthur, Ont.
Engineer, Public Works Dept.
1. L. J. HAYES, 2434 Niagara Ave., Niagara Falls, N.Y.
1.*F. D. HENDERSON, Secy. Board of Examiners for D.L.S., Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
5.*J. A. HORTON, Winnipeg, Man.
Chemist, Lever Brothers.
3. J. G. JACKSON, 98 Frontenac St., Kingston, Ont.
3. G. K. JOHNSTON, Pefferlaw, Ont.
Merchant.
1. H. JOHNSTON, O.L.S., Kitchener, Ont.
City Engineer.
3. A. G. LANG, 190 University Ave., Toronto, Ont.
Hydro-Electric Power Commission.
1.*A. J. LATORNELL, B.A.Sc. (died of wounds received in action, 1917).
1.*H. J. MCAUSLAN, B.A.Sc., O.L.S., North Bay, Ont.
Staff of T. & N. O. Ry.
3. J. A. MCFARLANE, B.A.Sc., Hamilton, Ont.
Chief Draftsman, Hamilton Bridge Works Co.
1.*A. L. MCNAUGHTON, Prince Rupert, B.C.
With G. T. P. Co.
5.*F. G. MARRIOTT, B.A.Sc., Toronto, Ont.
Chemist and Supt. Asphalt Plant, City Testing Laboratory.
3.*C. A. MAUS, Paris, Ont.
3.*M. L. MILLER, Pittsburgh, Pa.
Draftsman, McClintic-Marshall Construction Co.
3. P. H. MITCHELL, E.E., Toronto, Ont.
Consulting Electrical Engineer, Traders Bank Building.
2.*R. H. MONTGOMERY, B.A.Sc., O. and D.L.S., Prince Albert, Sask.
Engineer and Surveyor.
1. F. A. MOORE, Toronto, Ont.
Engineering Dept. C. N. Ry.
3. E. E. MULLINS, Port Limon, Costa Rica.
Supt. Motive Power, Northern Ry. Co.
3. I. H. NEVITT, B.A.Sc., Toronto, Ont.
Asst. Engineer, Main Drainage Dept., City Hall.
1. E. W. OLIVER, B.A.Sc., C.E., Toronto, Ont.
Assistant to Chief Engineer, Canadian Northern Ry. System.
3. J. P. OLIVER, Saskatoon, Sask.
3. J. D. PACE, B.A.Sc.,
3. B. B. PATTEN, B.A.Sc.,
On Overseas Service.
2. D. H. PHILP, Ottawa, Ont.
Georgian Bay Canal Survey.
3.*D. H. PINKNEY, Elyria, O.
National Tube Dept., U. S. Steel Corporation.

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*Diploma with honours.

1903—*Continued.*

2. T. H. PLUNKETT, B.A.Sc., Meaford, Ont.
Dominion Land Surveyor.
1. D. F. ROBERTSON, D.L.S.,
On Overseas Service.
3.*H. M. SCHEIBE, B.A.Sc., 10 Adelaide Rd., Somerville, Mass.
Supt., E. F. Delisle Co.
1.*H. L. SEYMOUR, B.A.Sc., D.L.S., Box 151, Ottawa, Ont.
Sanitary Engineer.
1. J. H. SMITH, D. & O.L.S., 140 Jasper Ave. West, Edmonton, Alta.
Engineer and Surveyor.
3. H. G. SMITH, B.A.Sc. (deceased).
3. S. L. TREES, B.A.Sc., Whitby, Ont.
Manager, Samuel Trees & Co.
2. J. E. UMBACH, Victoria, B.C.
Surveyor General, British Columbia.
1. J. WALDRON, D.L.S., Moose Jaw, Sask.
Engineer and Surveyor.
3.*S. B. WASS, Fredericton, N.B.
Supt. St. John & Quebec R.R.
3. J. A. WHELIHAN, Box 165, Regina, Sask.
3. H. F. WHITE,
On Overseas Service.
2.*C. G. WILLIAMS, B.A.Sc., Timmins, Ont.
Supt., Hollinger Consolidated Gold Mines, Ltd.
1.*N. D. WILSON, B.A.Sc., Toronto, Ont.
Toronto Harbour Commission.
1.*C. R. YOUNG, B.A.Sc., C.E., M.E.I.C., Toronto, Ont.,
Asst. Professor in Structural Engineering, University of Toronto.

1904.

3.*J. H. ALEXANDER, B.A., C.E., A. M. Am. Soc. C.E., Winnipeg, Man.
Engineer and Contractor.
3.*J. H. BARRETT, Toronto, Ont.
With the Wm. Davies Co., Ltd.
3. M. B. BONNELL, Sanitarium, Ont.
3. T. D. BROWN, B.A.Sc., Calgary, Alta.
Canadian Fairbanks Co.
1. R. J. BURLEY, Ottawa, Ont.
Dept. of the Interior.
3. F. W. BURNHAM, B.A.Sc.,
On Overseas Service.
3. J. W. CALDER, B.A.Sc., Fort William, Ont.
With Hydro-Electric Commission.
1. N. C. CAMERON, 4172 Dorchester St., Montreal, Que.
Dominion Engineering and Construction Co.
1. A. J. CAMPBELL, B.A.Sc., Collingwood, Ont.
3.*A. M. CAMPBELL, B.A.Sc., M.E. Weston, Ont.
Erection Engineer, Toronto Structural Steel Co.
4. J. B. CHALLIES, C.E. Ottawa, Ont.
Hon. Rec. Sec., Honorary Advisory Council for Scientific and Industrial Research.
2. C. A. CHILVER, Walkerville, Ont.

*Diploma with honours.

1904—*Continued.*

2. H. L. CHILVER,
On Overseas Service.
1. U. W. CHRISTIE, B.A.Sc., O.L.S., Orangeville, Ont.
Wheelock & Christie, Civil Engineers.
2. P. C. COATES, B.A.Sc., Victoria, B.C.
D. and B. C. Land Surveyor.
1. S. B. CODE, O.L.S., Smith's Falls, Ont.
Civil Engineer and Land Surveyor.
1.*T. F. CODE, B.A.Sc. (deceased).
1.*W. A. COWAN, Cochrane, Ont.
Division Engineer, Transcontinental Railway.
3.*S. E. CRAIG, B.A.Sc., Snelgrove, Ont.
1.*S. R. CRERAR, B.A.Sc., O.L.S., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. W. M. CURRIE, Hamilton, Ont.
General Manager, Burlington Steel Co., Ltd.
3. H. H. DEPEW, Fernie, B.C.
Supt. Crow's Nest Pass Electric Light and Power Co.
2. A. J. ELDER, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. J. G. FLECK,
On Overseas Service.
1.*A. L. FORD, B.A.Sc., Prince Rupert, B.C.
Government Inspector, Dept. of Railways and Canals.
3. W. S. GIBSON, B.A.Sc., 38 Park Rd., Toronto, Ont.
1. J. N. GOODALL, Chatham, Ont.
Gray-Dort Motors, Ltd.
1. J. P. GORDON, Box 266, Dauphin, Man.
Engineering Staff, Willis Chipman, C.E.
3. W. W. GRAY, B.A.Sc., Toronto, Ont.
Inspector, Fairbanks Morse Co.
3. A. GRAY, B.A.Sc.,
On Overseas Service.
3. W. K. GREENWOOD, B.A.Sc., Orillia, Ont.
Town Engineer.
1. L. D. HARA, St. Catharines, Ont.
Assistant Engineer, Welland Canal Co.
3. C. J. HARRIS, B.A.Sc., Brantford, Ont.
With Brantford Screw Co.
1. J. B. HERON, B.A.Sc.,
On Overseas Service.
1. E. M. M. HILL, Edmonton, Alta.
Engineering Dept. Canadian Northern Railway.
2. S. N. HILL, C.E., "The Alexandra", Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
2. C. J. INGLES,
On Overseas Service.
1. E. A. JAMES, B.A.Sc., C.E., Toronto, Ont.
Engineer, York County Highway Commission.
1. P. V. JERMYN, B.A.Sc., 118 King St. West, Toronto, Ont.
C. P. R. Construction Department.
3. W. S. H. KEEFE, Fort Covington, N.Y.
Manager, Light, Heat and Power Co.
3. W. J. LARKWORTHY (deceased).

*Diploma with honours.

1904—*Continued.*

3. O. B. McCUAIG, B.A.Sc.,
On Overseas Service.
1. G. G. McEWEN, B.A.Sc., Winchester, Ont.
Office of T. H. Dunn, O.L.S.
1.*W. G. McFARLANE, B.A., B.A.Sc., 55 Elliott St., Toronto, Ont.
Engineer and Surveyor, Peace River Dist.
3.*C. P. McGIBBON, B.A., Hamilton, Ont.
Canadian Westinghouse Co.
3. C. McKAY, B.A.Sc. (deceased).
1. D. McMILLAN, Edmonton, Alta
With C.N.R.
3. G. J. MANSON, M.E., Penetang, Ont.
Engineer, Grenville Board Co.
1.*W. N. MOORHOUSE, Toronto, Ont.
3. E. E. MOORE, Toronto, Ont.
Hydro-Electric Power Commission.
3. W. H. MUNRO,
On Overseas Service.
3. G. PACE, B.A.Sc., Midland, Ont.
With Simcoe Ry. and Power Co.
3. W. S. PARDOE, B.A.Sc., Philadelphia, Pa.
Asst. Prof. in Civil Engineering, University of Pennsylvania.
3. J. PARIS, North Bay, Ont.
c/o S. B. Clement, T.N.O. Ry.
1. J. PARKE, B.A.Sc., Havilah, Ont.
Chemist and Assayer.
3. W. J. PEAKER, Ottawa, Ont.
Topographical Surveys Branch, Dept. of the Interior.
3.* A. E. PICKERING, Sault Ste. Marie, Ont.
Manager, Tagona Light and Power Co.
1. D. L. C. RAYMOND, B.A.Sc., Montreal, Que.
The Raymond Construction Co., Ltd.
1. F. B. REID, B.A.Sc., Ottawa, Ont.
Astronomical Surveys Branch, Dept. of the Interior.
3.*M. R. RIDDELL, B.A.Sc., Toronto, Ont.
Chief Engineer, Canadian Aeroplanes and Motors, Ltd.
1. L. H. ROBINSON, Box 745, Truro, N.S.
3. G. S. ROXBURGH, B.A.Sc., Winnipeg, Man.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
2. F. N. RUTHERFORD, B.A.Sc., St. Catharines, Ont.
Engineer and Land Surveyor.
3. P. M. SAUDER, 513 8th Ave. W., Calgary, Alta.
1.*J. D. SHEPLY, B.A.Sc., D.L.S. N. Battleford, Sask.
District Surveyor and Engineer.
3. F. W. SLATER, B.A.Sc., Schenectady, N.Y.
With General Electric Co.
3.*R. S. SMART, M.E., Ottawa, Ont.
Manager, Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. D. A. SMITH, B.A.Sc., D. & S. L. S.,
On Overseas Service.
3. W. J. SMITHER, B.A.Sc., Toronto, Ont.
Lecturer in Structural Engineering, University of Toronto.

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*Diploma with honours.

1904—*Continued.*

S. E. THOMSON, B.A.Sc., Niagara Falls, Ont.
Engineering Staff, Electrical Development Co.
3. C. J. TOWNSEND, B.A.Sc., C.E. 79 Spadina Ave., Toronto, Ont.
Wilson, Townsend & Saunders.
1. D. T. TOWNSEND, B.A.Sc., O.L.S., Calgary, Alta.
Chief Surveyor, Dept. of Natural Resources, C.P.R.
1. A. V. TRIMBLE, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
3. B. B. TUCKER, B.A.Sc., Morrisburg, Ont.
Resident Engineer, New York and Ontario Power Co.
2.*E. WADE, B.A., Welland, Ont.
Builder.
1.*E. W. WALKER, B.A.Sc. (deceased).
3. J. P. WATSON, B.A.Sc., Montreal, Que.
With Dominion Bridge Co. Ltd.
1. J. M. WEIR, Toronto, Ont.
Sec.-Treasurer, The Toronto Plate Glass Importing Co., Ltd.
1.*A. F. WELLS, O.L.S., B.A.Sc., Toronto, Ont.
Wells & Gray, Ltd., Engineers and Contractors.
1. W. R. WORTHINGTON, B.A.Sc., Toronto, Ont.
Assistant Sewer Engineer, Staff of City Engineer.
3. W. F. WRIGHT, Toronto, Ont.
Ontario Manager, Eugene F. Phillips Electrical Works.

1905.

2. H. W. ARENS (deceased).
3. R. H. ARMOUR, 345 Jarvis Street, Toronto, Ont.
3.*C. B. AYLESWORTH, Hamilton, Ont.
Draftsman, Canadian Westinghouse Co.
1.*W. BARBER, B.A.Sc., Toronto, Ont.
Engineer, Waterworks Department, City Hall.
2.*W. A. BEGG, B.A.Sc., Regina, Sask.
Department of Public Works.
3.*G. G. BELL,
On Overseas Service.
1. J. C. BOECKH, Toronto, Ont.
With Boeckh Brush Co.
3. W. M. BRISTOL, Halifax, N.S.
Canadian Westinghouse Co.
2. W. C. CAMPBELL, Keene, Ont.
3. W. R. CARSON, Cleveland, O.
Engineering Dept., Grasselli Chemical Co.
1. A. V. CHASE, Ottawa, Ont.
Dept. of the Interior.
3. S. R. A. CLEMENT, Toronto, Ont.
With Hydro-Electric Power Commission.
3. T. E. CORRIGAN, New Westminster, B.C.
Electrical Contractor.
1.*N. L. R. CROSBY, B.A.Sc., Toronto, Ont.
Contracting Engineer, Toronto Structural Steel Co.
1. G. H. FERGUSON, B.A.Sc., Ottawa, Ont
Assistant Engineer, Commission of Conservation.
3. H. S. FIERHELLER, B.A.Sc. (deceased).

*Diploma with honours.

1905—*Continued.*

3. F. H. HARRISON, 320 Fifth Ave., New York, N.Y.
Engineer, H. D. Best Co.
1. M. C. HENDRY, B.A.Sc., Winnipeg, Man.
Manitoba Hydrographic Survey.
2. C. S. L. HERTZBERG.
On Overseas Service.
3.*W. G. HEWSON, B.A.Sc., Toronto, Ont.
Hydro Electric Power Commission.
1. G. S. JONES, Ottawa, Ont.
Topographical Surveys Br., Dept. of Interior.
3.*G. KRIBS, 190 University Ave., Toronto, Ont.
With H.E.P.C.
2. P. A. LAING,
On Overseas Service.
1. A. LATORNELL, B.A.Sc., Toronto, Ont.
Sewer Department, City Hall.
3. J. W. LEIGHTON, Toronto, Ont.
President, Leighton-Jackes Mfg. Co.
1.*T. R. LOUDON, B.A.Sc.,
On Overseas Service.
3. S. E. MCGORMAN, Walkerville, Ont.
Asst. Engineer, Canadian Bridge Co.
1.*W. W. MCGREGOR (deceased).
2. D. W. MCKENZIE, Winnipeg, Man.
Draftsman, Engineering Dept. C.N. Ry.
3.*C. A. MCLEAN. Toronto, Ont.
Masco Co.
2. W. N. MCLEAN, Erin, Ont.
3. F. G. MACE, Ottawa, Ont.
Patent Examiner, Dept. of Agriculture.
3. R. W. MOFFATT, B.A.Sc., Winnipeg, Man.
University of Manitoba.
3. L. W. MORDEN, St. Catharines, Ont.
Packard Electric Co.
3. G. R. MUNRO, B.A.Sc., Peterborough, Ont.
c/o Wm. Hamilton Manufacturing Co.
3.*W. G. NICKLIN, B.A.Sc., Grand Rapids, Mich.
Assistant Superintendent, Dalnu & Kiefer Tanning Co.
1. E. D. O'BRIEN, Dartmouth, N.S.
Chief Engineer, Halifax & Marine Ry.
1.*B. B. PATTEN, B.A.Sc.,
On Overseas Service.
1. E. P. A. PHILLIPS, B.A.Sc., O.L.S., Port Arthur, Ont.
Phillips & Benner.
1. W. B. PORTE, Oakville, Ont.
2. E. F. PULLEN,
On Overseas Service.
2. G. L. RAMSEY, B.A.Sc., Sault Ste. Marie, Ont.
Ontario Land Surveyor.
1. G. W. RAYNER, Toronto, Ont.
Ontario Rock Co.
3.*R. B. ROSS (deceased).
5. T. E. ROTHWELL, B.A.Sc., Toronto, Ont.
Provincial Assay Office.

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*Diploma with honours.

1905—*Continued.*

2.*G. S. SCOTT, 26 Howard St., Toronto, Ont.
3. H. V. SERSON, Arnprior, Ont.
3. C. H. SHIRRIFF, B.A.Sc., Toronto, Ont.
Chemist, Imperial Extract Co.
3.*C. E. SISSON, Peterboro', Ont.
Canadian Gen. Electric Co.
1. D. L. N. STEWART, B.A.Sc.,
On Overseas Service.
1. M. A. STEWART, Toronto, Ont.
Assistant Engineer, Roadway Dept., City Hall.
3.*W. F. STUBBS, Galt, Ont.
Assistant Engineer, Goldie & McCulloch Co.
1. N. H. STURDY, Youngstown, O.
Chief Engineer, Truscon Steel Co.
1. W. G. SWAN, B.A.Sc., C.E., New Westminster, B.C.
1.*F. H. SYKES, O. & D.L.S., Toronto, Ont.
City Architect's Dept., City Hall.
3. L. R. THOMSON, B.A.Sc., Ottawa, Ont.
Sec., Hon. Advisory Council for Scientific and Industrial Research.
3. E. D. TILLSON, B.A.Sc., 502 Webster Building, Chicago, Ill.
1.*J. J. TRAILL, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
1.*W. M. TREADGOLD, B.A., Toronto, Ont.
Asst. Professor in Surveying, University of Toronto.
3. W. E. TURNER, B.A.Sc., Salt Lake City, Utah
With Utah Light & Ry. Co.
3. A. E. UREN, Toronto, Ont.
Editor, Acton Publishing Co.
3. J. M. VAUGHAN. 58 Melville Ave., Toronto, Ont.
Contractor.
1. H. L. WAGNER, B.A.Sc., 76 Mavety St., Toronto, Ont.
Instructor, Invalided Soldiers' Commission.
2. W. H. YOUNG, B.A.Sc., D.L.S., Calgary, Alta.
District Engineer.

1906.

1. F. ALPORT, B.A.Sc., D.L.S.
On Overseas Service.
3.*W. L. AMOS, Toronto, Ont.
Hydro-Electric Power Commission.
1. A. H. ARENS, Orillia, Ont.
3.*J. C. ARMER, B.A.Sc.,
On Overseas Service.
1. M. H. BAKER, B.A.Sc., Toronto, Ont.
With Canadian Fire Underwriters Ass'n.
3. F. W. BALDWIN, Hammondsport, N.Y.
With Dr. Graham Bell.
2. E. W. BANTING, B.A.Sc., Toronto, Ont.
Lecturer in Surveying, University of Toronto.
3. F. BARBER, 57 Adelaide St. East, Toronto, Ont.
York County Engineer.

*Diploma with honours.

1906—*Continued.*

2. M. BATES, B.A.Sc. (deceased).
2. J. P. BELLISLE (deceased).
3.*H. H. BETTS, B.A.Sc.,
On Overseas Service.
5.*D. E. BEYNON, B.A.Sc., Toronto, Ont.
General Supt., Dunlop Tire and Rubber Goods Co.
2. G. W. BISSETT, Naughton, Ont.
Mill Supt., Canadian Exploration Co., Ltd.
3. W. C. BLACKWOOD, B.A.Sc., Guelph, Ont.
Professor of Physics, Ontario Agricultural College.
3. H. E. BRANDON, B.A.Sc.,
On Overseas Service.
1. M. E. BRIAN, B.A.Sc., O.L.S., A.M.E.I.C., Windsor, Ont.
City Engineer.
2. F. C. BROADFOOT, Vancouver, B.C.
Broadfoot, Johnston & Hamilton.
2. T. W. BROWN, B.A.Sc., D., S. & A.L.S., A.M.E.I.C.,
Brown & Loucks, Civil Engineers. Saskatoon, Sask.
1.*A. E. K. BUNNELL, B.A.Sc., Toronto, Ont.
Engineer, Civic Transportation Committee.
3. F. M. BYAM, Toronto, Ont.
Chief Engineer, McGregor and McIntyre.
3. A. CAMERON, Winnipeg, Man.
Provincial Architect's Office.
3. A. W. CAMPBELL, B.A.Sc., Toronto, Ont.
1. M. J. CARROLL, Ottawa, Ont.
Topographical Surveys Branch, Department of the Interior.
3.*R. E. C. CHADWICK, Montreal, Que.
Eastern Manager, The Foundation Co., Ltd., of New York.
1.*G. T. CLARK, B.A., Toronto, Ont.
Designing Engineer, Toronto Harbour Commission.
3.*G. A. COLHOUN, Hamilton, Ont.
Draftsman, The Hamilton Bridge Works Co., Ltd.
1.*W. A. M. COOK, B.A.Sc., Toronto, Ont.
Staff of City Architect, City Hall.
1.*E. L. COUSINS, B.A.Sc., Toronto, Ont.
General Manager, Harbour Commission.
4. A. G. CREIGHTON, Prince Albert, Sask.
Creighton & Strothers, Architects and Structural Engineers.
4. W. N. DANIELS, Noble Road, Jenkintown, Pa.
3.*N. P. F. DEATH, B.A.Sc., Toronto, Ont.
Death & Watson, Electrical Engineers and Contractors.
3. C. S. DUNDASS, B.A.Sc., Lachine, Que.
With Dominion Bridge Co.
3. S. L. FEAR, Toronto, Ont.
With Canada Foundry Co.
5.*C. C. FORWARD, 50 Bedford Row, Halifax, N.S.
5. C. W. GRAHAM, B.A.Sc., Toronto, Ont.
Chemist, Dunlop Tire and Rubber Goods Co.,
3. J. GRAY,
On Overseas Service.
1.*P. W. GREENE,
On Overseas Service.

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*Diploma with honours.

1906—*Continued.*

3. C. B. HAMILTON, B.A.Sc., Toronto, Ont.
Manager, Hamilton Gear and Machinery Co.
1.*A. L. HARKNESS, B.A.Sc., Montreal, Que.
St. Lawrence Bridge Co., Ltd.
1.*R. L. HARRISON, Toronto, Ont.
1. E. HARRISON, B.A.Sc., 513 Beveridge Blk., Calgary, Alta.
Consulting Civil Engineer and Surveyor.
3. J. C. HARTNEY, B.A.Sc. (Killed in action, France, 1918).
1. S. HETT, B.A.Sc., LePas, Man.
Locating Engineer of the Hudson Bay Ry.
3. C. R. HILLIS. (Killed in action, France, 1918).
3. C. W. HOOKWAY, B.A.Sc., Hamilton, Ont.
Westinghouse Mfg. Co.
3. R. H. HOPKINS, B.A.Sc.,
On Overseas Service.
1.*R. S. HOUSTON, Winnipeg, Man.
With the Dominion Bridge Co.
2.*W. HUBER, Toronto, Ont.
With Provincial Highway Commission.
3.*A. H. HULL, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. W. C. JEPSON, Niagara Falls, Ont.
Welland Canal Office.
1.*C. JOHNSTON, B.A.Sc., Oakville, Ont.
Engineer, Toronto and York Radial Ry.
1. G. R. JONES, B.A.Sc.,
On Overseas Service.
3. T. JONES, B.A.Sc. (Killed in action, France, 1916).
1.*A. E. JUPP, B.A.Sc., Toronto, Ont.
3. J. D. KEPPY (deceased).
5. H. M. LANCASTER, B.A.Sc., Toronto, Ont.
Provincial Board of Health Laboratory.
1. J. L. LANG, B.A.Sc., D. & O.L.S.,
On Overseas Service.
3. A. P. LINTON, B.A.Sc.,
On Overseas Service.
4.*A. WELLESLEY MCCONNELL, B.A.Sc., Toronto, Ont.
Assistant Professor of Architecture, University of Toronto.
3.*D. G. MCILWRAITH, Galt, Ont.
Draftsman, The Goldie & McCulloch Co., Ltd.
2. J. A. MCKENZIE, Kerrisdale, B.C.
c/o J. A. McKenzie & Co.
1.*J. V. MCNAB, Moose Jaw, Sask.
Resident Engineer, C.P.R.
3. J. A. MCPHERSON, Toronto, Ont.
2. K. A. MACKENZIE, B.A.Sc., Toronto, Ont.
Teacher, Technical High School.
1. W. C. MACKINNON, Lachine, P.Q.
Dominion Bridge Co.
3.*W. MACLACHLAN, B.A.Sc., Toronto, Ont.
Electrical Employers Ass'n., and Hydro Electric Power Commission.
3.*D. W. MARRS, 534 Centennial Ave., Sewickley, Pa.

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*Diploma with honours.

1906—*Continued.*

3. W. A. MAXWELL, Winnipeg, Man.
Dominion Bridge Co.
1.*REV. J. MELLON MENZIES, B.A.Sc., D.L.S.,
On Overseas Service.
3. L. R. MILLER, B.A.Sc., Watrous, Sask.
Supt., Electric Light, Power and Traction Co.
1.*B. F. MITCHELL, B.A.Sc., Edmonton, Alta.
Municipal Engineer.
1. F. F. MONTAGUE.
On Overseas Service.
1.*W. J. MOORE, O.L.S., Pembroke, Ont.
Morris & Moore, Land Surveyors and Architects.
1. C. R. MURDOCK, B.A.Sc., Burlington, Ont.
Resident Engineer, Chipman and Power.
2. C. J. MURPHY, B.A.Sc., Nova Scotia Bank Bldg., St. Catharines, Ont.
Consulting Engineer.
1.*W. P. NEAR, B.A., B.A.Sc., St. Catharines, Ont.
City Engineer.
2. R. NEELANDS,
On Overseas Service.
3. D. G. PARK, B.A.Sc., 92 Arlington St., Winnipeg, Man.
Engineer, Waldron Co., Ltd., Heating Engineers.
3. G. W. PATERSON, 800 Poyntz Ave., Manhattan, Kansas.
5. R. E. PETTINGILL, Port Colborne, Ont.
Chief Chemist, Canada Cement Co.
2.*R. C. PURSER, B.A.Sc., 213 Fifth Ave., Ottawa, Ont.
Office of Surveyor General.
3. N. R. ROBERTSON, B.A.Sc., Walkerton, Ont.
1. J. O. RODDICK, B.A.Sc., Brantford, Ont.
Contractor.
1. C. H. ROGERS, B.A.Sc., Peterborough, Ont.
2.*O. ROLFSON, M.A.Sc., D. & O.L.S.,
On Overseas Service.
1. R. C. ROSS, B.A.Sc., Ottawa, Ont.
Department of the Interior.
1. K. G. ROSS, Sault Ste. Marie, Ont.
Lang & Ross, Engineers and Surveyors.
1.*H. T. ROUTLY, O. & D.L.S., Toronto, Ont.
Construction Engineer, Provincial Highways.
2. J. H. RYCKMAN, Sault Ste. Marie, Ont.
With Algoma Construction & Eng. Co.
3.*W. K. SANDERS, 58 Webster St., West Newton, Mass.
1.*W. A. SCOTT, B.A.Sc., D.L.S., Galt, Ont.
Dominion Land Surveyor.
1.*W. M. STEWART, B.A.Sc., Saskatoon, Sask.
Phillips, Stewart & Lee.
2. J. E. THOMSON, B.A.Sc., Toronto, Ont.
Lecturer in Mineralogy, University of Toronto.
3.*C. L. VICKERY (deceased).
5. W. E. WICKETT (deceased).
3.*J. N. WILSON, B.A.Sc., Toronto, Ont.
Asst. Eng. H.E.P.C.
3.*E. M. WOOD, B.A.Sc., Toronto, Ont.
H.E.P.C.

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*Diploma with honours.

1907.

3.*F. G. ALLEN, B.A.Sc., 707 High Street, Easton, Pa.
1. F. J. ANDERSON, B.A.Sc. (Killed in action, Nov. 1917).
1. A. P. AUGUSTINE,
On Overseas Service.
1. O. B. BOURNE, Morrisburg, Ont.
H.E.P.C.
3.*H. D. BOWMAN, B.A.Sc., Y.M.C.A., Brooklyn, N.Y.
3. W. S. BRADY, B.A.Sc., 413 Palmerston Ave., Toronto, Ont.
1. G. H. BROUGHTON, 176 Montrose Ave., Toronto, Ont.
1. J. A. BROWN, B.A.Sc., Vancouver, B.C.
Trussed Concrete Steel Co.
1. W. J. BRUCE, Sault Ste. Marie, Ont.
Dept. of Public Works.
1. C. E. BUSH, B.A.Sc., 156 Geoffrey St., Toronto, Ont.
3. J. H. CASTER, Toronto, Ont.
Hydro-Electric Power Commission.
1.*E. CAVELL, Toronto, Ont.
1.*C. B. B. CONNELL, St. Kitts, B.W.I.
3.*G. C. COWPER, B.A.Sc., Welland, Ont.
Topographical Surveys in Sask.
2. J. V. CULBERT, B.A.Sc., Cobalt, Ont.
Buffalo Mines.
3.*R. S. DAVIS, B.A.Sc., 315 Rogers Bldg., Vancouver, B.C.
Davis, Hartney & Co.
3. S. D. EVANS, B.A.Sc., Leamington, Ont.
3.*F. R. EWART, B.A.Sc., Toronto, Ont.
Ewart & Jacob, Excelsior Life Building.
1. G. R. S. FLEMING. (Killed in action, 1917).
6. P. C. FUX, B.A.Sc., Brantford, Ont.
With Waterous Engine Works Co.
1. J. S. GALLETLY, B.A.Sc., Brooklin, Ont.
2. G. GALT, B.A.Sc. (Killed in action, France, 1916).
1. A. B. GARROW, B.A.Sc.,
On Overseas Service.
1. A. GILLIES, B.A.Sc.,
On Overseas Service.
1. G. W. GRAHAM, Eugenia, Ont.
3. C. S. GRASETT, B.A.Sc., Barrie, Ont.
1.*R. E. W. HAGARTY, B.A.Sc., 662 Euclid Avenue, Toronto, Ont.
Industrial Engineer.
3. K. HALL, B.A.Sc.,
On Overseas Service.
1. C. T. HAMILTON, B.A.Sc., 142 Hastings St. W., Vancouver, B.C.
Johnston and Hamilton.
3. R. A. HARE, St. Catharines, Ont.
With Canadian Crocker Wheeler Co.
1. H. F. H. HERTZBERG,
On Overseas Service.
3.*H. O. HILL, B.A.Sc.
On Overseas Service.
1.*T. H. HOGG, B.A.Sc., C.E., Toronto, Ont.
Asst. Engineer, Hydro-Electric Power Com.

*Diploma with honours.

1907—*Continued.*

3.*C. H. HUTTON, B.A.Sc., Hamilton, Ont.
Engineering Staff, Dominion Power Co.
1. H. M. HYLAND, B.A.Sc., 39 Portland Street, New York, N.Y.
3. E. W. HYMAN, B.A.Sc., London, Ont.
Assistant Superintendent, London Electric Co.
3.*L. G. IRELAND, B.A.Sc.,
Chief Engineer, Hydro-Electric System, Eastern Ontario.
1.*W. JACKSON, B.A.Sc., Niagara Falls, Ont.
Field Engineer, Ontario Power Co.
4.*C. B. JACKSON, Toronto, Ont.
Jackson-Lewis Co.
3.*E. W. KAY, B.A.Sc., 517 Bannatyne Ave., Winnipeg, Man.
3. D. F. KEITH, B.A.Sc.,
On Overseas Service.
1. H. P. KEITH, Edmonton, Alta.
Smith & Keith, Alta. Land Surveyors and Engineers.
1. A. A. KINGHORN, B.A.Sc., Toronto, Ont.
Manager, Asphaltic Concrete Co. of Toronto, Ltd.
1. L. W. KLINGER,
On Overseas Service.
1.*F. C. LAMB, B.A.Sc., Saskatoon, Sask.
Phillips, Stewart & Lee.
3. A. D. LEPAN, B.A.Sc., Toronto, Ont.
Asst. Supt. of Buildings and Grounds, University of Toronto.
1. J. H. LINDSAY, S. & D. L. S., Prince Albert, Sask.
Dist. Surveyor and Engineer, Public Works Dept.
3. J. A. D. MCCURDY, Toronto, Ont.
Curtiss Aeroplane Co.
1.*J. B. MCFARLANE, B.A.Sc., Lake Saskatoon, Alta.
Dominion Land Surveyor.
3.*D. J. MCGUGAN, B.A.Sc., New Westminster, B.C.
Burnett & McGugan.
3. A. H. MCINTOSH, 59 Albany Ave., Toronto, Ont.
3. F. W. MCNEILL, B.A.Sc., Calgary, Alta.
Canadian General Electric Co.
1.*M. K. MCQUARRIE, Kentville, N.S.
Engineer, D.A.R.
1. A. G. MACKAY, New York, N.Y.
With Hudson & Manhattan Ry. Co.
1. W. D. MACKENZIE, 501 Tribune Bldg., Winnipeg, Man.
Div. Engineer, Greater Winnipeg Water Dist.
1.*G. MACLEOD, 10126 124th Street, Edmonton, Alta.
1. W. S. MALCOLMSON, B.A.Sc., 163 Havelock Street, Toronto, Ont.
Engineer and Surveyor.
3. S. A. MARSHALL, Welland, Ont.
6. D. H. C. MASON, B.A.Sc., 295 Russell Hill Drive, Toronto, Ont.
1. J. W. MELSON, B.A.Sc., Toronto, Ont.
Demonstrator in Str. of Mat. and Physics, University of Toronto.
1. G. G. MILLS, B.A.Sc.,
On Overseas Service.
3. J. B. MINNS, B.A.Sc., Toronto, Ont.
Canadian General Electric Co.

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*Diploma with honours.

1907—*Continued.*

4.*G. N. MOLESWORTH, 3 Hawthorne Ave., Toronto, Ont.
1. J. M. MOORE, B.A.Sc., London, Ont.
With McClary Mfg. Co.
5.*P. F. MORLEY, Toronto, Ont.
Meteorological Office.
1. E. W. MURRAY, B.A.Sc., Regina, Sask.
Dept. of Public Works.
3. J. D. MURRAY. Toronto, Ont.
With Fetherstonhaugh & Co., Patent Solicitors and Engineers.
1. E. W. NEELANDS, B.A.Sc., New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. R. E. K. NEELANDS, B.A.Sc., Box 163, Guelph, Ont.
2.*B. NEILLY, B.A.Sc., M.E., Cobalt, Ont.
Manager, Penn-Canadian Mines.
1. A. E. NOURSE, B.A.Sc., Toronto, Ont.
3. J. J. O'SULLIVAN,
On Overseas Service.
2. T. K. PATON, Wardner, Ida.
Mining Engineer.
1. F. W. PAULIN, O.L.S., Bank of Hamilton Bldg., Hamilton, Ont.
Contractor.
1. R. B. POTTER, B.A.Sc., 235 Garden Ave., Toronto, Ont.
Asst. Engineer, Roadways Dept., City Hall.
3.*F. E. PROCHNOW, B.A.Sc. Buffalo, N.Y.
With Wilhelm, Parker & Ward, Patent Attorneys.
3.*J. F. PROCUNIER, 1232 Victoria Ave., Vancouver, B.C.
3. G. E. QUANCE, B.A.Sc., Delhi, Ont.
Secy.-Treas. of the Delhi Light & Power Co., Ltd.
3.*H. RAINE, Toronto, Ont.
With Prack & Perrine, Architects and Engineers.
1.*J. L. RANNIE, B.A.Sc., Ottawa, Ont.
Observer, Geodetic Survey.
3. C. W. B. RICHARDSON, B.A.Sc., Toronto, Ont.
Instructor in Drawing, University of Toronto.
1. A. A. RIDLER, Toronto, Ont.
Supt. Constructing & Paving Co., Ltd.
5. H. E. ROTHWELL, B.A.Sc., Toronto, Ont.
Harris Abattoir Co.
5. C. A. SCHOFIELD, Buffalo, N.Y.
Chemist, Schoellkopf-Hartford & Hanna Co.
1.*A. C. T. SHEPPARD, Ottawa, Ont.
Geological Survey.
1. F. R. SMITH, B.A., Vancouver, B.C.
3. E. R. SMITHRIM, B.A.Sc., Strathroy, Ont.
1.*W. SNAITH, Niagara Falls, Ont.
H.E.P.C.
3. A. C. SPENCER, B.A.Sc., London, Ont.
3. G. S. STEWART, Toronto, Ont.
Sales Engineer, Canadian General Electric Co.
1. J. A. STILES, B.A.Sc., Fredericton, N.B.
Professor of Civil Engineering, University of N.B.

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*Diploma with honours.

1907—*Continued.*

3.*J. L. STIVER, Ottawa, Ont.
Electrical Standard Laboratory, Inland Revenue Department.
1. J. L. G. STUART, B.A.Sc., Oakville, Ont.
Resident Engineer, Toronto-Hamilton Highway.
1. G. F. SUMMERS, O.L.S., Haileybury, Ont.
Routly & Summers, Engineers and Surveyors.
1.*H. W. SUTCLIFFE, New Liskeard, Ont.
Sutcliffe & Neelands, Consulting Engineers.
1. P. M. THOMPSON, B.A.Sc., 54 Thorold St., Toronto, Ont.
3. O. R. THOMSON, B.A.Sc., Trenton, Ont.
The Electric Power Co.
1. L. R. THOMSON, B.A.Sc., Ottawa, Ont.
Sec., Hon. Advisory Council for Scientific and Industrial Research.
1. W. J. WALKER, Grant, Ont.
With Transcontinental Ry.
1. E. D. WILKES, B.A.Sc., Toronto, Ont.
Main Drainage Department, City Hall.
3. A. F. WILSON, B.A.Sc., Cleveland, Ohio.
With Cleveland Telephone Co.
3. M. H. WOODS, B.A.Sc., Aylmer West, Ont.
1. G. W. A. WRIGHT, 65 Oakmount Bl., Toronto, Ont.
Supervisor of Prod'ns., Imperial Munitions Bd.
3. J. YOUNG, Box 2973, Winnipeg, Man.
3.*A. R. ZIMMER, B.A.Sc., Toronto, Ont.
Lecturer in Electrical Engineering, University of Toronto.

1908.

3. H. G. AKERS, B.A.Sc. (deceased).
R. J. ARENS, B.A.Sc., Akron, Ohio.
Supt., Firestone Tire Co.
3. L. F. ALLAN,
On Overseas Service.
1.*C. B. ALLISON, O.L.S., South Woodslee, Ont.
1.*R. M. ANDERSON, B.A.Sc.,
On Overseas Service.
5. R. J. ARENS, B.A.Sc., Akron, O.
Chemist, Firestone Tire & Rubber Co.
3. H. C. BARBER, B.A.Sc.,
On Overseas Service.
1. E. BARTLETT, B.A.Sc., Medicine Hat, Alta.
Surveyor and Civil Engineer.
2. F. J. BEDFORD (deceased).
1.*G. G. BELL,
On Overseas Service.
3. G. E. BLACK, B.A.Sc., Toronto, Ont.
Provincial Secretary's Office.
3. H. F. BOWES, Toronto, Ont.
Superintendent of Warren Bituminous Paving Co., Ltd.
3.*J. H. BRACE, Montreal, P.Q.
Traffic Engineer, Bell Telephone Co.
1. P. R. BRECKEN, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1908—*Continued.*

3. E. I. BROWN, Toronto, Ont.
Sales Dept., Northern Electric & Manufacturing Co.
1. W. F. M. BRYCE, Ottawa, Ont.
Assistant Engineer, City Engineer's Department.
3. P. H. BUCHAN, B.A.Sc., Vancouver, B.C.
2. J. E. CAMPBELL, B.A.Sc., Coldstream, Ont.
3. N. A. CAMPBELL, 629 4th Street, Edmonton, Alta.
3. A. M. CARROLL,
On Overseas Service.
1. H. R. CARSCALLEN, B.A.Sc., 341 Markham Street, Toronto, Ont.
3. G. CHALLEN, Chedoke P.O., Hamilton, Ont.
1. F. H. CHESNUT, B.A.Sc., San Francisco, Cal.
With White Truck Co.
1. W. E. COLE (deceased).
4.*W. C. COLLETT, B.A.Sc., Toronto, Ont.
Construction Engineer, British Acetones, Toronto, Ltd.
1. R. Y. CORY, B.A.Sc., 5 Deer Park Cres., Toronto, Ont.
3.*H. COYNE, B.A.Sc., Racine, Wisc.
With Thomas & Thomas.
2.*J. D. CUMMING, B.A.Sc., Copper Cliff, Ont.
Asst. Mech. Supt., with Canadian Copper Co.
6. A. D. DAHL, B.A.Sc., Midland, Mich.
Chemist, Dow Chemical Co.
1. F. A. DANKS, Toronto, Ont.
Advertising Dept., "Canadian Engineer."
3. J. DARROCH, Detroit, Mich.
Draftsman, Autoparts Mfg. Co.
3. H. C. DOORLY (deceased).
2. R. H. DOUGLAS, Edmonton, Alta.
Department of Public Works.
2.*F. C. DYER, B.A.Sc., Toronto, Ont.
Lecturer in Mining Engineering, University of Toronto.
1. F. M. EAGLESON, Winchester, Ont.
Engineer and Surveyor.
1. C. EDWARDS, B.A.Sc.,
On Overseas Service.
1. S. L. EVANS, B.A.Sc., Corinth, Ont.
Dominion Land Surveyor
1. E. O. EWING, B.A.Sc. Toronto, Ont.
With James, Loudon & Hertzberg.
1. O. L. FLANAGAN, B.A.Sc., Cobalt, Ont.
Engineer.
1. C. FLINT, B.A.Sc.,
On Overseas Service.
1. A. H. FOSTER, B.A.Sc., Guelph, Ont.
With Guelph St. Ry.
3. G. C. FRANCIS, Toronto, Ont.
With Canadian Fire Underwriters Ass'n.
3. S. S. GEAR, St. Catharines, Ont.

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*Diploma with honours.

1908—*Continued.*

1. C. A. GRASSIE, B.A.Sc., Collingwood, Ont.
With Kennedy & Sons.
3.*C. L. GULLEY, B.A.Sc., Pembroke, Ont.
Manager, Superior Electric, Ltd.
3. J. W. HACKNER, B.A.Sc., Toronto, Ont.
Asst. Engineer, Dept. of Public Works.
3. F. L. HAVILAND, Hamilton, Ont.
Draftsman, Hamilton Bridge Works Co.
1.*C. D. HENDERSON, Walkerville, Ont.
Canadian Bridge Co.
1. E. G. HEWSON, Toronto, Ont.
Division Engineer, Grand Trunk Ry.
5.*D. J. HUETHER, B.A.Sc., Toronto, Ont.
With Dunlop Tire and Rubber Co.
1. A. D. HUETHER, B.A.Sc., 47 Highview Cres., Toronto, Ont.
3.*A. N. HUNTER, B.A.Sc., Detroit, Mich.
Canadian Inspection Co.
3. S. B. ILER.
On Overseas Service.
1.*J. T. JOHNSTON, B.A.Sc., Ottawa, Ont.
Hydraulic Engineer, Water Power Branch, Dept. of the Interior.
2. H. G. KENNEDY, B.A.Sc.,
On Overseas Service.
1.*W. R. KEYS, North Bay, Ont.
T. & N. O Ry.
3. W. C. KILLIP,
On Overseas Service.
3.*J. N. M. LESLIE, B.A.Sc., Toronto, Ont.
With Canadian Westinghouse Co.
3. F. C. LEWIS, Toronto, Ont.
Jackson-Lewis Co.
3. H. R. LYNAR, St. Catharines, Ont.
Welland Ship Canal Office.
1.*W. G. MCGEORGE, Chatham, Ont.
Consulting Engineer.
1. J. M. MCGREGOR, Chatham, Ont.
McCubbin & McGregor.
1. L. A. MCLEAN, B.A.Sc. (deceased).
1. W. A. A. MCMASTER, A.S. & D.L.S., Prince Albert, Sask.
1. H. C. MCMORDIE, B.A.Sc.,
On Overseas Service.
1.*A. A. MCROBERTS, B.A.Sc., North Bay, Ont.
T. & N. O. Ry.
5.*N. G. MADGE, 406 West 5th Ave., Roselle, N.J.
3. J. E. MALONE, B.A.Sc., Chicago, Ill.
With Illinois Steel Co.
5. K. D. MARLATT, Oakville, Ont.
1. R. J. MARSHALL, B.A.Sc., Toronto, Ont.
Canadian Inspection & Testing Co.
5. G. L. MILLIGAN, B.A.Sc., Brampton, Ont.
1. A. B. MITCHELL, Orillia, Ont.
With N. MacLeod, Contractor.
4.*J. C. P. MOLESWORTH (deceased).

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*Diploma with honours.

1908—*Continued.*

3. E. D. MONK, B.A.Sc., Cincinnati, Ohio
General Electric Co.
3.*F. H. MOODY, B.A.Sc., Toronto, Ont.
3. J. H. MORICE, B.A.Sc., San Francisco, Cal.
With General Electric Co.
3. F. E. H. MOWBRAY, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
3.*W. P. MURRAY, B.A.Sc., St. Paul's Station, Ont.
3. W. de C. O'GRADY, Calgary, Alta.
Ford Motor Car Company.
1. H. J. PECKOVER, B.A.Sc., 103 Cowan Ave., Toronto, Ont.
Draughtsman, City Hall.
1.*M. PEQUEGNAT, B.A.Sc., Kitchener, Ont.
1. H. G. PHILLIPS, D. & S.L.S., Regina, Sask.
Smith & Phillips, Civil Engineers.
3. M. PIVNICK, B.A.Sc., Toronto, Ont.
Dentist.
1.*E. M. PROCTOR, B.A.Sc., Toronto, Ont.
Secretary-Treasurer, James, Loudon & Hertzberg.
3.*C. F. PUBLOW, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
1. J. T. RANSOM, B.A.Sc., D. & O.L.S.,
Land Surveyor. 47 Braemore Gardens, Toronto, Ont.
1.*W. B. REDFERN, B.A.Sc.,
On Overseas Service.
1. F. L. RICHARDSON, B.A.Sc., Toronto, Ont.
With Miller, Cummings & Robertson.
3. H. A. RICKER, B.A.Sc , Hamilton, Ont.
Canadian Westinghouse Co.
1. A. R. ROBERTSON, B.A.Sc.,
On Overseas Service.
5. F. A. ROBERTSON, Toronto, Ont.
With Canada Cement Co.
1.*W. A. ROBINSON, Winnipeg, Man.
Right-of-Way Surveyor, C.P.R.
3. R. C. ROBINSON, Winnipeg, Man.
With C. N. Ry.
5. L. J. ROGERS, B.A.Sc., Toronto, Ont.
Assistant Professor in Analytical Chemistry, University of Toronto.
2.*R. R. ROSE, B.A.Sc.,
On Overseas Service.
3. D. ROSS, B.A.Sc., Dominion Savings Bldg., London, Ont.
1. A. O. SECORD, Brantford, Ont.
3. W. E. V. SHAW, B.A.Sc.,
On Overseas Service.
3. H. F. SHEARER, B.A.Sc., Toronto, Ont.
1. W. L. STAMFORD, B.A.Sc., Point du Bois, Man.
Inspector on Concrete Work, Hydro-Electric Power Plant.
3. R. H. STARR, B.A.Sc., Orillia, Ont.
Engineer.
3. A. W. J. STEWART, Toronto, Ont.
Toronto Hydro-Electric System.

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*Diploma with honours.

1908—*Continued.*

3. J. ST. LAWRENCE, Erie, Pa.
General Electric Co.
1. J. J. STOCK, D.L.S., 448 Cowper St., Ottawa, Ont.
1. H. B. STUART, B.A.Sc.,
On Overseas Service.
2. J. L. G. STUART, B.A.Sc., Toronto, Ont.
Railway & Special Works Department, City Hall.
3. A. D. SWORD, B.A.Sc., Woodstock, Ont.
With Canadian Milk Products.
3. J. W. R. TAYLOR, B.A.Sc., Toronto, Ont.
Sales Dept., Canadian Westinghouse Co.
1.*W. E. TAYLOR, B.A.Sc., 323 Glen Road, Toronto, Ont.
York County Engineer's Office.
3. V. C. THOMAS, B.A.Sc., 34 McRae St., Niagara Falls, Ont.
1. J. H. THORNLEY, B.A.Sc., Dundas St., London, Ont.
1. C. G. TOMS, B.A.Sc., 56 Spencer Ave., Toronto, Ont.
General Manager, Toms Contracting Co., Ltd.
1. H. W. TYE,
On Overseas Service.
3. C. P. VAN NORMAN, B.A.Sc., Toronto, Ont.
Toronto & York Radial Ry.
1. T. L. VILLENEUVE, Chicoutimi, Que.
Assistant Engineer, Dept. of Public Works.
1. J. A. WALKER, B.A.Sc., B.C.L.S., Ottawa, Ont.
Inspector Artillery Stores, Militia Dept.
3.*B. W. WAUGH, B.A.Sc.,
On Overseas Service.
3. R. M. WEDLAKE, B.A.Sc., Brantford, Ont.
With Cockshutt Plow Co., Ltd.
3. R. P. WEIR, Toronto, Ont.
Canadian Manager, Cutter Elec. and Mfg. Co.
1. A. M. WEST, B.A.Sc., N. Vancouver, B.C.
1. W. R. WHITE, Ottawa, Ont.
Chief Surveyor's Office, Dept. of Indian Affairs.
3. W. J. WHITE, B.A.Sc., Perth, Australia.
With British Thomson Houston Co.
3.*F. D. WILSON, B.A.Sc., Detroit, Mich.
1. J. M. WILSON, Toronto, Ont.
District Engineer, Dept. of Public Works of Canada.
1. D. O. WING, Vancouver, B.C.
City Engineer's Office.
3.*R. YOUNG, Vancouver, B.C.
With B.C. Electric Railway Co.

1909.

3. E. G. ARENS, Orillia, Ont.
3. H. V. ARMSTRONG, Estevan, Sask.
Town Engineer.
2.*E. T. AUSTIN, B.A.Sc., Coniston, Ont.
With the Mond Nickel Co.

*Diploma with honours.

1909—*Continued.*

3. W. H. BARRY, B.A.Sc., Niagara Falls, Ont.
Anderson and Barry, Engineers and Surveyors.
3. R. D. S. BECKSTEDT, B.A.Sc., Lacolle, Que.
3. R. E. BEITH,
On Overseas Service.
1.*G. A. BENNETT, B.A.Sc., C.E., Ottawa, Ont.
Topographical Surveys Br., Dept. of the Interior.
3. E. R. BIRCHARD, B.A.Sc., Toronto, Ont.
Russell Motor Car Co.
3. W. D. BLACK, B.A.Sc., Montreal, Que.
Supt., Otis-Fensom Elevator Co., Ltd.
3.*D. C. BLIZARD, B.A.Sc., Toronto, Ont.
Supt. Mechanical Construction, Toronto Power Co.
1.*W. J. BOULTON, B.A.Sc., Ottawa, Ont.
Surveyor, Dept. of Interior.
3. G. H. BOWEN, B.A.Sc., Toronto, Ont.
3. C. E. BROWN, B.A.Sc., Hamilton, Ont.
Canadian Westinghouse Co.
1. E. W. BROWNE, B.A.Sc., 247 Cannon St. E., Hamilton, Ont.
1. J. A. BUCHANAN, 140 Jasper West, Edmonton, Alta.
3. J. E. BURNS, B.A.Sc., 231 Seaton St., Toronto, Ont.
1. M. G. CAMERON, B.A.Sc., Peterboro', Ont.
3.*R. A. CAMPBELL, Sault Ste. Marie, Ont.
With Municipal Lighting Plant.
1. V. S. CHESNUT, B.A.Sc., East St. John, N.B.
With St. John Dry Dock Co.
1.*C. G. CLINE, B.A.Sc., Vancouver, B.C.
Assistant Engineer, Dept. of the Interior.
1. J. G. COLLINSON, B.A.Sc., Port Weller, Ont.
Welland Ship Canal.
1. G. W. COLTHAM, B.A.Sc., Aurora, Ont.
3.*H. A. COOCH, B.A.Sc., Toronto, Ont.
Canadian Westinghouse Co.
3. W. E. CORMAN, Toronto, Ont.
Supt., Excelsior Electric Mfg. Co., Ltd.
3. T. H. CROSBY, B.A.Sc., Vancouver, B.C.
Sales Engineer, Canadian Westinghouse Co.
3. R. H. CUNNINGHAM, Walkerville, Ont.
Canadian Hoskins Ltd.
1.*F. A. DALLYN, B.A.Sc., C.E.,
On Overseas Service.
3. C. N. DANKS, Sherbrooke, Que.
Asst. Engineer, Jenckes Machine Co.
1. E. M. DANN. (Died of wounds received in action, France, 1916).
3. H. W. DAVIS, Kingston, Ont.
With A. Davis & Son, Ltd., Leather Manufacturers.
2.*A. I. DAVIS, B.A.Sc., Toronto, Ont.
1. H. C. DAVIS, Burlington, Ont.
1. I. H. DAWSON. (Died of wounds received in action, 1918).
3. W. H. DELAHAYE, B.A.Sc.,
On Overseas Service.
3. W. P. DERHAM, B.A.Sc., Athelma Aprts., Toronto, Ont.
5.*W. A. DODDS, B.A.Sc. Syracuse, N.Y.
Chief Chemist, Penman-Littlehales Chemical Co.

*Diploma with honours.

1909—*Continued.*

1. R. H. DOUGLAS, Edmonton, Alta.
Department of Public Works.
6. A. R. DUFF, Toronto, Ont.
Demonstrator in Applied Chemistry, University of Toronto.
1. M. O. DUFF, 4 Hughson St. S., Hamilton, Ont.
2. L. J. DUTHIE, 33 High Park Gardens, Toronto, Ont.
1. F. S. FALCONER, B.A.Sc., Ottawa, Ont.
Geological Surveys Br., Dept. of Interior.
3. T. A. FARGEY, B.A.Sc., Detroit, Mich.
With Scott Bros. Electric Co.
1. J. B. FERGUSON, B.A.Sc., Cheyenne, Wyoming.
c/o Div. Engineer, V.P.R.R.
3. A. T. FERGUSSON, B.A.Sc., 70 Madison Ave., Toronto, Ont.
3. T. E. FREEMAN, B.A.Sc., Montreal, Que.
Manager, Canadian Hoskins Ltd.
3. E. R. FROST, B.A.Sc., Welland, Ont.
Engineer, Metals Chemical Ltd.
1. A. E. GLOVER, B.A.Sc., Edmonton, Alta.
5. A. E. GOODERHAM, Toronto, Ont.
With Gooderham & Worts.
1. D. A. GRAHAM, B.A.Sc.,
On Overseas Service.
2. R. R. GRANT, 961½ Gerrard St. E., Toronto, Ont.
Contractor,
1. J. E. GRAY, B.A.Sc.,
On Overseas Service.
1. G. E. D. GREENE, B.A.Sc.,
On Overseas Service.
1. W. H. GREENE, Moose Jaw, Sask.
Assistant City Engineer.
1. W. W. GUNN, B.A.Sc., 243 Quebec Ave., Toronto, Ont.
3. F. G. HAGERMAN Cobourg, Ont.
3. C. J. HARPER Collingwood, Ont.
Engineer and Surveyor.
1. D. W. HARVEY, B.A.Sc., Toronto, Ont.
Canada Foundry Co.
1. C. O. HAY (deceased).
3.*J. HEMPHILL, Magpie Mine, Ont.
Construction Engineer, Algoma Steel Corpn., Mines Dept.
1.*G. HOGARTH, Toronto, Ont.
Chief Engineer of Highways, Dept. of Public Works of Ontario.
3. A. E. HOLMES, B.A.Sc., Montreal, P.Q.
Canadian Westinghouse Co.
3. C. R. HOLMES, B.A.Sc.,
On Overseas Service.
1. G. C. HOSHAL, B.A.Sc., Niagara Falls, Ont.
Hydro-Electric Power Commission.
3. C. HUGHES, B.A.Sc. (killed in action, France, 1915).
1. A. E. HUNTER, B.A.Sc. (deceased).
3. H. IRWIN, B.A.Sc., 25 Glenlake Ave., Toronto, Ont.
3. J. ISBISTER. B.A.Sc., Onaway, Mich.
Onaway Electric Light and Power Co.
3. F. P. JACKES, B.A.Sc.,
On Overseas Service.

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*Diploma with honours.

1909—*Continued.*

1.*J. E. JACKSON, 7 Hughson St. S., Hamilton, Ont.
1. E. W. JAMES, B.A.Sc., Winnipeg, Man.
Bridge Engineer, Manitoba Government.
1.*C. C. JOHNSON, B.A.Sc., Wallaceburg, Ont.
1. C. E. JOHNSTON, B.A.Sc. (deceased).
1. W. J. JOHNSTON, Vancouver, B.C.
Mackenzie, Broadfoot & Johnston.
1.*A. H. E. KEFFER, Toronto, Ont.
With James, Loudon & Hertzberg.
3. J. B. O. KEMP, B.A.Sc., St. Catharines, Ont.
On Staff, Ridley College.
3. W. R. KEY, B.A.Sc., Toronto, Ont.
Asst. Engineer, Turnbull Elevator Co.
5. H. N. KLOTZ, B.A.Sc. (Killed in action, France, 1915).
3. A. W. LAMONT, B.A.Sc., Winnipeg, Man.
Canadian Westinghouse Co.
3.*C. B. LANGMUIR, B.A.Sc., Toronto, Ont.
Manager, Electrical Dept., Factory Products, Ltd.
3. A. E. LENNOX, B.A.Sc., Cleveland, Ohio
Publicity Engineer, National Electric Lamp Association.
1.*R. W. E. LOUCKS, Regina, Sask.
Provincial Surveys Branch.
1. N. C. A. LLOYD, Toronto, Ont.
Brown & Brown, Surveyors.
3. E. D. MACFARLANE, B.A.Sc., Houston, Texas
With Houston Electric Ry. Co.
1. J. G. MACKINNON,
On Overseas Service.
1. W. A. MACLACHLAN, B.A.Sc.,
On Overseas Service.
3. B. A. MACLEAN, B.A.Sc., Orillia, Ont.
1. N. W. MACPHERSON, B.A.Sc., St. Thomas, Ont.
3. D. D. MCALPINE, B.A.Sc., 387 Markham St., Toronto, Ont.
1. A. S. MCARTHUR, B.A.Sc.,
On Overseas Service.
3. C. R. MCCOLLUM, B.A.Sc., Wainfleet, Ont.
3.*A. S. MCCORDICK, B.A.Sc., Sault Ste. Marie, Ont.
Assistant to City Engineer.
3. P. J. MCCUAIG, B.A.Sc.,
On Overseas Service.
3. W. G. MCINTOSH, B.A.Sc., Toronto, Ont.
Herbert Morris Crane and Hoist Co.
1. F. H. MCKECHNIE, B.A.Sc., 216 Wilson Ave., Montreal, Que.
3. J. H. MCKNIGHT, Simcoe, Ont.
3. G. MCLEOD, Waupaca, Wis.
Electrician, Electric Light & Ry. Co.
1. V. MCMILLAN, B.A.Sc., London, Ont.
With Empire Mfg. Co.
3.*A. L. MALCOLM, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of Interior.
3. N. H. MANNING, B.A.Sc., Toronto, Ont.
With Canadian Inspection & Testing Co.
1.*A. B. MANSON, B.A.Sc., A.M.E.I.C., Stratford, Ont.
City Engineer.

*Diploma with honours.

1909—*Continued.*

1. E. S. MARTINDALE, B.A.Sc., Aylmer, Ont.
Dominion Land Surveyor.
1. O. W. MARTYN, B.A.Sc., D. & S.L.S.,
On Overseas Service.
2. C. A. MORRIS, B.A.Sc.,
On Overseas Service.
3. G. MORTON, B.A.Sc., Calgary, Alta.
Manager, Canadian Westinghouse Co.
1.*F. V. MUNRO, B.A.Sc., Chatham, Ont.
1. E. A. NEVILLE, B.A.Sc., Prince George, B.C.
1. J. NEWTON, B.A.Sc.,
On Overseas Service.
3.*L. S. ODELL, Toronto, Ont.
Imperial Munitions Board.
3. V. J. O'DONNELL, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
3. J. J. O'HEARN, Toronto, Ont.
Rose & O'Hearn.
1. A. W. PAE, Edmonton, Alta.
Davidson & Pae, Real Estate Brokers.
1.*A. M. PETRY, B.A.Sc.,
On Overseas Service.
3.*W. M. PHILP, B.A.Sc.,
On Overseas Service.
1. R. B. PIGOTT, B.A.Sc.
On Overseas Service.
2. G. M. PONTON, Ottawa, Ont.
Lt. Imperial Munitions Board, Explosives Dept.
3.*C. J. PORTER, B.A.Sc., Dallas, Texas.
With Texas Power and Light Co.
3. A. I. PROCTOR, 852 King St. E., Hamilton, Ont.
1. J. QUAIL, Winnipeg, Man.
Manitoba Bridge and Iron Works.
1. A. F. RAMSPERGER, Toronto, Ont.
With Canada Foundry Co.
1.*C. R. REDFERN, B.A.Sc., Toronto, Ont.
Engineer, P. Lyall & Sons, Ltd., Contractors.
3.*L. T. RUTLEDGE, B.A.Sc., 320 Concord Ave., Toronto, Ont.
Manager, Excelsior Electric Mfg. Co., Ltd.
1. A. U. SANDERSON, B.A.Sc., Toronto, Ont.
Chief Engineer, Filtration Plant.
3.*R. A. SARA, B.A.Sc., E.E., New York, N.Y.
American Cellulose & Chemical Mfg. Co.
3.*C. SCHWENGER, B.A.Sc., Toronto, Ont.
Toronto Hydro-Electric System.
1. C. A. SCOTT,
On Overseas Service.
1. A. SEDGWICK, Toronto, Ont.
Ontario Dept. of Public Works.
1. B. H. SEGRE, B.A.Sc.,
On Overseas Service.
1. F. V. SEIBERT, B.A.Sc., Edmonton, Alta.
Engineer and Surveyor, Dept. of Interior.
5. M. R. SHAW, B.A.Sc., Waggaman, La.
Chief Chemist, Export Oil Corporation.

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*Diploma with honours.

1909—*Continued.*

3. M. W. SPARLING, B.A.Sc., Cobourg, Ont.
Electric Power Co.
3. J. J. SPENCE, Toronto, Ont.
With Sovereign Construction Co., Ltd.
1. D. S. STAYNER, B.A.Sc., C.E.
On Overseas Service.
2.*R. B. STEWART, M.A., B.A.Sc. Toronto, Ont.
1.*N. C. STEWART, B.A.Sc., Nelson, B.C.
1.*P. H. STOCK, 12 Fernwood Park Ave., Toronto, Ont.
1. J. C. STREET, B.A.Sc., St. Catharines, Ont.
Welland Ship Canal.
3. S. STROUD, B.A.Sc., Toronto, Ont.
With Canadian Westinghouse Co.
1. C. C. SUTHERLAND, B.A.Sc., C.E., 10714 125th St., Edmonton, Alta.
Alberta Dept. of Public Works.
1. R. G. SWAN, B.A.Sc., Vancouver, B.C.
B. C. Hydrographic Survey.
1. A. D. SWORD, B.A.Sc., Woodstock, Ont.
With Canadian Milk Products.
1.*H. W. TATE, B.A.Sc., Toronto, Ont.
3.*E. A. THOMPSON. Teeswater, Ont.
1. G. A. TIPPER, B.A.Sc., Brantford, Ont.
Contracting Surveyor.
3. A. G. TREES, B.A.Sc.,
On Overseas Service.
3. W. G. TURNBULL, B.A.Sc., Toronto, Ont.
Chief Engineer, Turnbull Elevator Co.
1. J. E. UNDERWOOD, Saskatoon, Sask.
McArthur, Murphy & Underwood.
1. C. P. VAN NORMAN, B.A.Sc., Toronto, Ont.
Toronto and York Radial Ry.
1. J. VAN NOSTRAND, 91 Delaware Ave., Toronto, Ont.
1. A. VATCHER, B.A.Sc., Freshwater, Bay de Verde, Nfld.
With the Reid Newfoundland Co.
1. C. M. WALKER, B.A.Sc., Banff, Alta.
Dom. Land Surveyor.
1. C. E. WEBB, B.A.Sc., Vancouver, B.C.
B.C. Hydrographic Survey, Dom. Water Power Br.
1. E. E. WEBB, Box 358, Orillia, Ont.
Contractor.
3. F. C. WHITE, B.A.Sc. 164 Richmond Street, Chatham, Ont.
Engineer, Canadian Des Moines Steel Co., Ltd.
3. A. R. WHITELAW, B.A.Sc., 10720 103rd St., Edmonton, Alta.
1. R. G. WILKINSON, Aberarder, Ont.
5.*J. A. McK. WILLIAMS, B.A.Sc., Toronto, Ont.
A. E. Ames & Co.
1. O. T. G. WILLIAMSON, B.A.Sc., 225 Grange Road, Guelph, Ont.
3. L. R. WILSON, B.A.Sc., Lachine, Que.
Dominion Bridge Co.
3. F. F. WILSON, B.A.Sc., Toronto, Ont.
Surveyor.
2. S. A. WOOKEY, B.A.Sc., Schumacher, Ont.
Manager, Schumacher Mine.

*Diploma with honours.

1910.

2. J. H. ADAMS, B.A.Sc., 25 Maynard Ave., Toronto, Ont.
3.*O. F. ADAMS, B.A.Sc., 132 Ulster Street, Toronto, Ont.
3. J. N. AGNEW,
On Overseas Service.
1.*W. G. AMSDEN, B.A.Sc., (killed in action, Aug. 1918).
1. J. A. BAIRD, B.A.Sc., Sarnia, Ont.
Town Engineer.
1.*W. J. BAIRD, B.A.Sc., R. R. No. 2, Scarborough Jct., Ont.
R. R. Grant & Co., Engineers and Surveyors.
1. H. A. BARNETT, B.A.Sc., Durand, Mich.
With G.T. Ry.
1.*E. W. BERRY,
On Overseas Service.
1. H. C. BINGHAM, D.L.S., Briercrest, Sask.
Engineer and Surveyor.
2. D. G. BISSET, B.A.Sc., Hosmer, B.C.
C.P.R. Coal Mines.
1.*R. H. H. BLACKWELL, B.A.Sc., Orangeville, Ont.
With Wheelock & Christie.
1.*E. P. BOWMAN, B.A.Sc., West Montrose, Ont.
2. A. F. BROCK, B.A.Sc., Copper Cliff, Ont.
Chief Mine Surveyor, Canadian Copper Co.
3. M. O. BROWNE, 313 McClellan Ave., Detroit, Mich.
3. J. R. BURGESS, B.A.Sc.,
On Overseas Service.
1. N. G. H. BURNHAM, B.A.Sc. (deceased).
3.*W. C. CALE, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Comm.
2.*A. D. CAMPBELL, B.A.Sc., M.E., Cobalt, Ont.
Mining Engineer, O'Brien Mine.
3. W. M. CARLYLE, B.A.Sc. (killed in action, 1916).
3. N. S. CAUDWELL, 82 Colborne Street, Brantford, Ont.
3. A. W. CHESNUT, B.A.Sc., (Died at Shorncliffe, England, while on Overseas Service).
1. D. C. CHISHOLM, B.A.Sc., Winnipeg, Man.
Resident Engineer, C.N.R.
1. H. S. CLARK,
On Overseas Service.
1. J. A. CLAVEAU, Chicoutimi, Que.
3. L. S. COCKBURN, B.A.Sc., Wyandotte, Mich.
Engineering Dept., Pennsylvania Salt Mfg. Co.
3. A. G. CODE, B.A.Sc., Box 404, Niagara Falls S., Ont.
3. C. R. COLE, B.A.Sc., Woodstock, Ont.
1. G. A. COLQUHOUN, B.A.Sc., Ottawa, Ont.
Department of the Interior.
4.*J. H. CRAIG, B.A.Sc., 43 Cuthbert Crescent, Toronto, Ont.
3.*C. D. DEAN, B.A.Sc., 31 Hewitt Ave., Toronto, Ont.
With Imperial Oil Co.
5. A. V. DELAPORTE, B.A.Sc.,
On Overseas Service.
3. R. L. DOBBIN, B.A.Sc., Peterboro', Ont.
Waterworks Dept.

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*Diploma with honours.

1910—*Continued.*

3.*W. P. DOBSON, M.A.Sc., Toronto, Ont.
With Hydro-Electric Power Com.
3.*J. M. DUNCAN, B.A.Sc.,
On Overseas Service.
1. L. F. EADIE,
On Overseas Service.
2. V. H. EMERY, B.A.Sc., Timmins, Ont.
Mine Supt., Hollinger Mines.
3. W. J. EVANS, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Comm.
3. H. W. FAIRLIE, Montreal, Que.
Ry. Dept., The Northern Elec. & Mfg. Co.
3.*C. R. FERGUSON, B.A.Sc., Toronto, Ont.
3. J. W. FERGUSON, B.A.Sc., Toronto, Ont.
Dominion Bridge Co.
4.*J. B. K. FISKEN, B.A.Sc., Toronto, Ont.
With Darling & Pearson.
1. A. W. FLETCHER, B.A.Sc.,
On Overseas Service.
1.*J. A. FLETCHER, Fisher River, Man.
Assistant to D. W. Robinson, D.L.S.
3. F. T. FLETCHER, B.A.Sc. Calgary, Alta.
Dept. of Public Works.
3. T. R. C. FLINT, B.A.Sc. 12 Galley Ave., Toronto, Ont.
3. R. C. FOLLETT,
2. J. M. FOREMAN, B.A.Sc. Toronto, Ont.
1. W. J. FOSTER.
3.*W. C. FOULDS, B.ASc. Toronto, Ont.
Imperial Munitions Board.
1. A. FRASER, B.A.Sc. (deceased)
2. J. FREDIN, Princeton, B.C.
c/o B.C. Copper Co.
3. H. GALL, B.A.Sc., 6 Jameson Ave., Toronto, Ont.
1. M. M. GIBSON, B.A.Sc., Toronto, Ont.
Gibson & Gibson, O.L.S., C.E.
1. J. M. GIBSON, B.A.Sc., 429 Grace Street, Toronto, Ont.
1. V. A. E. GOAD, B.A.Sc., Montreal, P.Q.
Chas. E. Goad Co.
3. V. S. GOODEVE, Phoenix, B.C.
1. H. GOODRIDGE, Edmonton, Alta.
2. W. A. GORDON, Wallaceburg, Ont.
3. V. F. GOURLAY, B.A.Sc., Galt, Ont.
Manufacturer.
3. E. B. GRAHAM, B.A.Sc., Pittsburgh, Pa.
2. R. L. GREENE, B.A.Sc.,
On Overseas Service.
5. J. H. HARRIS, B.A.Sc., Danforth Ave., Toronto, Ont.
W. Harris & Co.
1. N. J. HARVIE, B.A.Sc. (Killed in action, France, 1916).
1. J. G. HELLIWELL (Killed in action, France, 1915).
1. J. F. HENDERSON,
On Overseas Service.
3. F. G. HICKLING, B.A.Sc., East Pittsburgh, Pa.
Westinghouse Electric & Manufacturing Co.

*Diploma with honours.

1910—*Continued.*

1. E. F. HINCH, 127 Delaware Ave., Toronto, Ont.
1. O. H. HOOVER, B.A.Sc.,
On Overseas Service.
2. P. E. HOPKINS, B.A.Sc., Toronto, Ont.
With Ontario Bureau of Mines.
3.*W. J. IRWIN,
2. F. L. JAMES, B.A.Sc., Tillsonburg, Ont.
3. E. A. JAMIESON, Vancouver, B.C.
MacAndrew & Jamieson Eng. Co.
1. H. C. JOHNSTON, 509 Palmerston Ave., Toronto, Ont.
1. R. H. JOHNSTON, B.A.Sc., 10162 116th St., Edmonton, Alta.
1. J. C. KEITH, B.A.Sc., Moose Jaw, Sask.
City Engineer's Office.
2.*J. T. KING, B.A.Sc., Toronto, Ont.
Lecturer in Mining Engineering, University of Toronto.
3. G. A. KINGSTONE, B.A.Sc.,
On Overseas Service.
2. G. L. KIRWAN, B.A.Sc., Ottawa, Ont.
Topographical Surveys Br., Dept. of Interior.
5. P. T. KIRWAN, B.A.Sc., Ottawa, Ont.
Chemist, Inland Revenue Dept.
1. S. KNIGHT, B.A.Sc., Bruce Mines, Ont.
3. E. R. LAWLER, Toronto, Ont.
Hydro-Electric Power Comm., 190 University Ave.
3.*C. B. LEAVER, B.A.Sc., Dartmouth, N.S.
Asst. Superintendent, Imperial Oil Co.
3. R. G. LEE, B.A.Sc., Toronto, Ont.
Toronto-Hydro Electric System, 226 Yonge Street.
1. J. N. LEITCH (deceased).
1. J. C. LONGSTAFF,
On Overseas Service.
3. J. B. MACDONALD, B.A.Sc., Victoria, B.C.
With Cameron Lumber Co., Ltd.
2. A. D. MACDONALD, B.A.Sc.,
On Overseas Service.
1. J. A. MACDONALD, B.A.Sc., Ridgetown, Ont.
Private Practice.
1. G. A. MACDONALD, B.A.Sc., Vancouver, B.C.
Private Practice.
1. A. E. MACGREGOR, B.A.Sc., Simcoe, Ont.
1. E. G. MACKAY, B.A.Sc.,
On Overseas Service.
1. G. G. MACLENNAN, B.A.Sc. (Killed in action, France, 1917).
1. D. D. MACLEOD, B.A.Sc. (Died of wounds received in action, France, 1916).
3. H. G. MACMURCHY, B.A.Sc., Messina, N.Y.
3.*H. J. MACTAVISH, B.A.Sc.,
On Overseas Service.
4. T. C. MCBRIDE, B.A.Sc., Calgary, Alta.
1. S. G. MCDOUGALL, B.A.Sc., 47 Vittoria Street, Ottawa, Ont.
1.*T. A. MCELHANNEY, B.A.Sc., Ottawa, Ont.
Special Surveys Br.
1.*P. J. MCGARRY, D. & O.L.S., Toronto, Ont.

*Diploma with honours.

1910—*Continued.*

3.*L. R. McKIM, Brantford, Ont.
1.*J. McNIVEN, B.A.Sc.,
On Overseas Service.
3. J. I. McSLOY, B.A.Sc., St. Catharines, Ont.
2. A. W. R. MAISONVILLE, B.A.Sc., Montreal, Que.
Dominion Bridge Co.
1.*N. MARR, B.A.Sc., Campbellford, Ont.
Res. Engr., Trent Canal.
1.*W. H. MARTIN, B.A.Sc., Toronto, Ont.
With Curry & Sparling, Architects.
2. A. C. MATTHEWS, B.A.Sc.,
On Overseas Service.
1. C. H. MEADER, B.A.Sc., O.L.S., Toronto, Ont.
3.*H. O. MERRIMAN, B.A.Sc.,
On Overseas Service.
1.*D. J. MILLER,
On Overseas Service.
1. F. S. MILLIGAN, B.A.Sc.,
On Overseas Service.
3. P. E. MILLS, B.A.Sc., 320 W. 56th St., New York, N.Y.
3. J. P. MORGAN, Toronto, Ont.
With Orpen Construction Co.
1. F. R. MORTIMER, B.A.Sc., Ottawa, Ont.
Hydrographic Survey, Dept. of Naval Service.
1. A. H. MUNRO, B.A.Sc., 352 Brock St., Peterborough, Ont.
3. J. C. NASH, B.A.Sc.,
On Overseas Service.
1.*V. A. NEWHALL, B.A.Sc., Edmonton, Alta.
Dept. of Interior.
2.*W. E. NEWTON, B.A.Sc., Sandon, B.C.
Slocan Star Mines.
1. F. T. NICHOL, B.A.Sc., Toronto, Ont.
Archibald & Holmes.
1. C. M. O'NEIL, B.A.Sc., Ottawa, Ont.
Top. Surveys Branch, Dept. of Interior.
3. C. E. PALMER, B.A.Sc., E.E., Toronto, Ont.
Bell Telephone Co.
3. G. C. PARKER, M.A.Sc., Toronto, Ont.
Roadways Branch, Dept. of Public Works.
3. K. K. PEARCE, B.A.Sc., Lachine, Que.
Dominion Bridge Co.
1. A. W. PEARSON, Weston, Ont.
3. C. H. PHILLIPS, B.A.Sc., 85 Manchester Place, Buffalo, N.Y.
1. D. E. PYE, Cranbrook, B.C.
1. W. S. RAMSAY, B.A.Sc., 86 Robert St., Toronto, Ont.
3. B. J. REDFERN (deceased).
3. C. E. RICHARDSON, B.A.Sc., Toronto, Ont.
1. H. C. RITCHIE, Calgary, Alta.
Dept. of Public Works.
1. O. W. ROSS, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1910—*Continued.*

1. W. F. B. RUBIDGE, Matheson, Ont.
   Abitibi Power & Paper Co., Ltd.
3. W. C. SHAW, B.A.Sc., Toronto, Ont.
   A. L. Torgis Garage.
3. N. C. SHERMAN,
   On Overseas Service.
1.*W. C. SMITH, B.A.Sc., C.E., Victoria, B.C.
   Engineer, Water Rights Branch, Dept. of Lands.
2. F. L. SMITH,
   On Overseas Service.
5. G. E. SMITH, B.A.Sc., Bozeman, Mont.
   Agricultural College.
2. R. J. SPRY, B.A.Sc., Eustis Mine, Que.
2. A. L. STEELE, B.A.Sc., Fergus, Ont.
2.*H. M. STEVEN, B.A.Sc., 83 St. Clair Ave. West, Toronto, Ont.
1.*L. I. STONE, Toronto, Ont.
   Resident Engineer, G.T. Ry.
3. A. L. SUTHERLAND, B.A.Sc., Toronto, Ont.
   With Canadian General Electric Co.
3. E. A. TERNAN, B.A.Sc., Arthur, Ont.
5.*W. H. THOM, Toronto, Ont.
   Factory Manager, Lyman Bros. & Co.
3. H. B. THOMPSON, B.A.Sc., Sarnia, Ont.
   Engineering Dept., Imperial Oil Co.
3. R. M. A. THOMPSON, B.A.Sc., Toronto, Ont.
   Hydro-Electric Power Com.
2.*C. G. TITUS, Renfrew, Ont.
   Renfrew Molybdenum Co.
3. K. M. VAN ALLEN, B.A.Sc. (Died of wounds in German prison camp, 1916).
1. L. T. VENNEY, B.A.Sc., Windsor, Ont.
   With Morris Knowles, Sanitary Engineer.
1. N. WAGNER, 19 Gerrard St. E., Toronto, Ont.
   Bridge Dept., Canada Foundry Co.
1. R. M. WALKER, B.A.Sc., Box 86, Hawkesbury, Ont.
2. T. WALTON, B.A.Sc. (deceased).
1. G. A. WARRINGTON, B.A.Sc., Winnipeg, Man.
   M.L.S., Parliament Bldgs.
3. M. B. WATSON, B.A.Sc., M.E., Toronto, Ont.
   Director of Engineering, Central Technical School.
3.*H. M. WHITE, Lachine Locks, Que.
   With Dominion Bridge Co.
1. J. L. WHITSIDE, B.A.Sc., (died of wounds received in action, 1916).
4. W. S. WICKENS, B.A.Sc., Toronto, Ont.
   With Canadian Fire Underwriters Association.
3.*G. K. WILLIAMS, B.A.Sc. (Killed in collision at Luxeuil, while on active service, 1916).
1.*W. H. WILSON, B.A.Sc., Toronto, Ont.
   Estimater, McGregor & McIntyre, Ltd.
3. G. E. WOODLEY (deceased).
1. G. R. WORKMAN, Toronto, Ont.

*Diploma with honours.

1910—*Continued.*

3. L. A. WRIGHT, B.A.Sc., 278 Jarvis St., Toronto, Ont.
Asst. Engineer, C.P.R.
3.*A. W. YOUELL, B.A.Sc. (died of wounds received in France, 1918.)
1. W. S. YOUNG, B.A.Sc., Guelph, Ont.

1911.

5.*J. AITKEN, B.A.Sc., Brantford, Ont.
Chemist, Malleable Iron Works.
1. L. B. ALLAN, B.A.Sc., Toronto, Ont.
3. E. G. ARCHER, B.A.Sc., Toronto, Ont.
With H.E.P.C.
1. L. A. BADGLEY, B.A.Sc., Toronto, Ont.
Architectural Dept., City Hall.
1. T. H. BARTLEY, B.A.Sc., O.L.S., Toronto, Ont.
2.*H. L. BATTEN,
On Overseas Service.
1. G. L. BERKELEY,
On Overseas Service.
3.*J. H. BILLINGS, B.A.Sc., S.M., Weston, Ont.
Lecturer on Machine Design, University of Toronto.
2.*J. R. BISSETT, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of Interior.
3. W. O. BOSWELL, B.A.Sc. (Died of Pleuro-Pneumonia while on active service, 1919).
1. F. BOWMAN, Lachine, Que.
Dominion Bridge Co.
3. T. W. BRACKINREID, B.A.Sc., Winnipeg, Man.
Canadian General Electric Co.
2. W. M. BROCK, B.A.Sc.,
On Overseas Service.
1. W. H. D. BROUSE, B.A.Sc., Toronto, Ont.
With Gordon C. Edwards.
3. H. O. BROWN, B.A.Sc., Toronto, Ont.
James, Loudon & Hertzberg, Ltd.
3.*E. T. CAIN, B.A.Sc., Moncton, N.B.
Canadian Government Railways.
1. C. S. CAMERON, Regina, Sask.
1. C. D. CAMPBELL, Hamilton, Ont.
Manager, Hamilton Securities, Ltd.
6.*W. W. CHADWICK, B.A.Sc., Hamilton, Ont.
Asst. Manager, Canadian Chadwick Metal Co.
1. R. B. CHANDLER, B.A.Sc., Whalen Building, Port Arthur, Ont.
1. P. G. CHERRY, B.A.Sc., Toronto, Ont.
Advertising Sales Manager, Might Directories, Ltd.
3. E. F. CHESNUT, B.A.Sc., Toronto, Ont.
Instructor, Invalided Soldiers' Commission.
1. H. J. CLARK, B.A.Sc., Toronto, Ont.
Dept. of Public Highways.
1. F. W. CLARK, 669 Spadina Ave., Toronto, Ont.
With Hydro-Electric Power Commission.
3. F. S. CLEARY (deceased).
2.*D. B. COLE, B.A.Sc., Cleveland, Ohio
Cleveland Cadillac Co.

*Diploma with honours.

1911—*Continued.*

3.*A. S. COOK, B.A.Sc., Cleveland, Ohio.
Superintendent, Construction Dept., Geo. R. Cook Co.
1. C. W. CORNELL, Toronto, Ont.
Imperial Ministry of Munitions.
1. M. E. CROUCH, 14 Algoma St., Port Arthur, Ont.
3. W. M. CRUTHERS, B.A.Sc., Peterboro', Ont.
Can. Gen. Electric Co.
1. O. F. CUMMINS, Regina, Sask.
Provincial Drainage Engineer
3. T. J. CUNERTY, 165 Broadway, New York, N.Y.
With Westinghouse Electric & Mfg. Co.
1. C. H. CUNNINGHAM, B.A.Sc., Hamilton, Ont.
1. J. H. CURZON, 178 Kingston Rd., Toronto, Ont.
Instructor, Invalided Soldiers' Commission.
3.*F. K. D'ALTON, B.A.Sc., Toronto, Ont.
H.E.P.C. Laboratories.
1. W. B. DAVIS, B.A.Sc., Frankford, Ont.
Trent Valley Canal.
3. F. C. DEGUERRE, B.A.Sc. (deceased).
5. L. W. DONCASTER, Toronto, Ont.
With Ault & Wiborg Co.
3.*F. H. DOWNING,
On Overseas Service.
1. W. B. DUNBAR, B.A.Sc.,
On Overseas Service.
5. C. H. ECKERT, B.A.Sc., 434 Queen's Ave., London, Ont.
3. J. A. ELLIOT, B.A.Sc., Niagara Falls, N.Y.
Castner Electrolytic Alkali Co.
1. G. R. ELLIOTT, B.A.Sc., Canmore, Alta.
Mine Engineer, Canmore Coal Co.
1. C. F. ELLIOTT, B.A.Sc.,
On Overseas Service.
1. K. A. FARRELL, B.A.Sc.,
On Overseas Service.
3. T. J. FARRELLY,
On Overseas Service.
1. S. E. FLOOK, B.A.Sc., Port Arthur, Ont.
O. L. Surveyor and Civil Engineer.
3. C. C. FLYNN, London, Ont.
5. E. L. FRANKEL, B.A.Sc., Toronto, Ont.
Frankel Bros.
2. E. E. FREELAND, B.A.Sc.,
On Overseas Service.
1. J. R. FREEMAN, B.A.Sc.,
On Overseas Service.
4.*H. P. FRID, B.A.Sc.,
On Overseas Service.
3.*R. J. FULLER, B.A.Sc., Toronto, Ont.
Chief Engineer, John V. Gray Const. Co., Ltd.
5.*J. L. GOODERHAM, B.A.Sc., Toronto, Ont.
General Distilling Co.
3. R. E. GREEN, B.A.Sc., Toronto, Ont.
3. E. A. GREENE, B.A.Sc.,
On Overseas Service.

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*Diploma with honours.

1911—*Continued.*

3. H. G. HALL, Woodstock, Ont.
With Hydro-Electric Power Commission.
1. G. M. HAMILTON, B.A.Sc., New Hamburg, Ont.
2. H. E. HARCOURT, 208 Dundas St. E., Toronto, Ont.
3. M. B. HASTINGS,
On Overseas Service.
2. M. B. HEEBNER, B.A.Sc., Coquitlam, B.C.
With The Foundation Co.
2. F. I. HELSON, Newburgh, Ont.
With C.N. Ry.
3. H. R. HILL, B.A.Sc., Toronto, Ont.
Hydro-Electric System.
1. A. J. HUFF, B.A.Sc.,
On Overseas Service.
1. K. HUFFMAN, Toronto, Ont.
1.*H. HYATT, B.A.Sc., Philadelphia, Pa.
With C. H. Wheeler Mfg. Co.
1.*R. H. JARVIS, B.A.Sc. (Accidentally killed while on overseas service, 1918).
1.*L. E. JONES,
On Overseas Service.
1.*E. A. KELLY, Winnipeg, Man.
Construction Dept., C.P.R.
3.*M. KIRKWOOD, B.A.Sc., New York, N.Y.
Am. Telephone and Telegraph Co.
2.*J. LANNING, B.A.Sc., Whitby, Ont.
Manager, Ford Garage.
1. N. LAWLESS, (died of pneumonia, France, 1915).
3. W. R. LETHBRIDGE.
2. M. I. LIEBERMAN, B.A.Sc., 700 Queen Street W., Toronto, Ont.
3. G. L. LILLIE, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
6. A. L. LONG, B.A.Sc., Toronto, Ont.
Long Chemical Co.
1.*A. W. P. LOWRIE, B.A.Sc.,
On Overseas Service.
7. W. M. MACANDREW, B.A.Sc., Vancouver, B.C.
MacAndrew & Jamieson Eng. Co.
3.*R. V. MACAULAY, B.A.Sc., Toronto, Ont.
2.*J. T. MACBAIN, Niagara Falls, N.Y.
Union Carbide Co.
1.*R. E. A. MACBETH, B.A.Sc. (Accidentally killed while on overseas service, 1918).
1. F. M. MACDONALD, B.A.Sc. 3 Rusholme Rd., Toronto, Ont.
3.*W. S. MACKENZIE, Woodstock, Ont.
With Canadian Linderman Co., Ltd.
5. J. A. MACKINNON, B.A.Sc., Calgary, Alta.
1.*J. G. MACLAURIN, B.A.Sc., Box 621, Sault Ste. Marie, Ont.
1. J. B. MCANDREW, B.A.Sc.,
On Overseas Service.
3.*J. A. MCEACHREN, Strathburn, Ont.
3. R. W. MCELROY, B.A.Sc., Toronto, Ont.
3. H. J. MCEWEN, B.A.Sc. Brantford, Ont.
3.*W. G. MCGHIE, B.A.Sc.,
On Overseas Service.

*Diploma with honours.

1911—*Continued.*

3. D. A. MCKENZIE, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Com.
2. A. J. MCLAREN, B.A.Sc.,
On Overseas Service.
3. A. G. MCLEISH Toronto, Ont.
Private Practice.
1.*R. A. MCLELLAN, B.A.Sc., Saskatoon, Sask.
With Murphy & Underwood.
2. W. B. MCPHERSON, B.A.Sc., 6 Meredith Crescent, Toronto, Ont.
3. A. A. MCQUEEN, B.A.Sc.,
4.*H. H. MADILL, B.A.Sc., Mem.O.A.A., Toronto, Ont.
Lecturer in Architecture, University of Toronto.
3. J. C. MARTIN, B.A.Sc., Toronto, Ont.
With Hydro-Electric System.
3. C. A. MEADOWS, B.A.Sc., 6 Sussex Ave., Toronto, Ont.
Geo. B. Meadows Co.
1. L. G. MILLS, B.A.Sc., 89 Glen Road, Toronto, Ont.
5. L. C. MITCHELL, Bay City, Mich.
2. J. A. MORPHY, B.A.Sc.,
On Overseas Service.
1. M. H. MURPHY, B.A.Sc., Toronto, Ont.
Contractor.
1. J. C. MURTON,
On Overseas Service.
3. E. H. NIEBEL, B.A.Sc., Regina, Sask.
Northern Electrical Co.
3. C. K. NIXON, B.A.Sc., Detroit, Mich.
3. E. S. NOBLE, B.A.Sc., Toronto, Ont.
1. R. K. NORTHEY, B.A.Sc.,
On Overseas Service.
2. W. A. O'FLYNN, B.A.Sc., Cobalt, Ont.
Temiskaming Mine.
1. W. V. OKE, B.A.Sc.,
On Overseas Service.
2. J. A. ORR, B.A.Sc., Clarkson's, Ont.
3. J. S. PARKER, B.A.Sc., Toronto, Ont.
With Hydro-Electric System.
3.*J. H. PARKIN, B.A.Sc., Toronto, Ont.
Lecturer in Mechanical Engineering, University of Toronto.
1.*J. MCD. PATTON, B.A.Sc., Toronto, Ont.
3. C. L. PEARSON, Calgary, Alta.
With City of Calgary.
2. S. J. PEPLER. (Killed in action, France, 1917).
3.*W. J. PERRIN, B.A.Sc. (deceased).
1. B. W. PICK, B.A.Sc., Regina, Sask.
With Smith & Phillips.
3.*E. H. PORTE, Toronto, Ont.
With Hydro-Electric Power Commission.
1.*F. M. PRATT, B.A.Sc., 343 Nepean Street, Ottawa, Ont.
4. H. PULLAN, Toronto, Ont.
With E. Pullan.
1. L. J. QUINLAN, B.A.Sc., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.

*Diploma with honours.

1911—*Continued.*

1. L. W. RAILTON,
On Overseas Service.
1.*J. E. RATZ, B.A.Sc., Elmira, Ont.
1. F. N. READ, B.A.Sc. (Killed in action, Passchendaele, 1917).
4. E. V. REID (Killed in action, France, 1917)
1.*W. A. RICHARDSON, B.A.Sc., 1135 Catherine St., Victoria, B.C.
1.*W. E. ROBINSON, B.A.Sc.,
On Overseas Service.
1. H. L. ROBLIN, B.A.Sc.,
On Overseas Service.
3. L. W. ROTHERY, B.A.Sc., East Pittsburg, Pa.
Westinghouse Machine Co.
4.*T. L. F. ROWE, Whitby, Ont.
Structural Engineer, Hospital for Insane.
3. A. S. RUNCIMAN, Marconi Towers, Glace Bay, C.B.
3. F. G. RUTLEY, B.A.Sc., Sydney, N.S.
Foundation Co. of Montreal.
1. E. M. SALTER, 901 Boyd Bldg., Winnipeg, Man.
1. F. R. SCANDRETT, B.A.Sc., Belgrave, Ont.
5. MISS H. E. SCOTT, B.A.Sc. Forest, Ont.
5.*J. W. SCOTT, B.A.Sc.,
Resident Engineer, Hudson Bay Ry.
3. N. D. SEATON, B.A.Sc., 360 Stewart St., Peterboro, Ont.
With General Electric Co.
1. N. SHARPE, 501 Tribune Bldg., Winnipeg, Man.
Greater Winnipeg Water District.
4.*P. SHEARD, B.A.Sc., 314 Jarvis Street, Toronto, Ont.
1.*W. A. SIBBETT,
On Overseas Service.
2.*C. P. SILLS, B.A.Sc., Seaforth, Ont.
1.*K. H. SMITH, Ottawa, Ont.
Water Power Branch, Dept. of the Interior.
3. M. L. SMITH, B.A.Sc. (deceased).
1. R. G. SNEATH,
On Overseas Service.
3.*G. E. SQUIRE, B.A.Sc., Toronto, Ont.
3. W. S. STEELE, B.A.Sc. (deceased).
5.*A. E. STEWART, B.A.Sc.,
On Overseas Service.
3.*R. O. STEWART, B.A.Sc., Moncton, N.B.
Bridge Dept., Intercolonial Ry.
3.*R. A. STORY, B.A.Sc.,
On Overseas Service.
1. C. F. SZAMMERS,
On Overseas Service.
3. R. TAYLOR, B.A.Sc.,
On Overseas Service.
1. J. B. TEMPLE, B.A.Sc., 438 Gladstone Ave., Toronto, Ont.
3. G. C. THOMAS,
On Overseas Service.
1. R. D. TORRANCE, B.A.Sc.,
On Overseas Service.

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*Diploma with honours.

1911—*Continued.*

1. W. G. TOUGH, B.A.Sc. (Died of wounds received in action, Sept. 1918).
1.*N. VICKERS. (Died of wounds received in action, April 1917).
2. J. H. C. WAITE, B.A.Sc., Toronto, Ont.
Consulting Engineer.
1. W. D. WALCOTT, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. G. L. WALLACE, B.A.Sc., Toronto, Ont.
Demonstrator in Physics, University of Toronto.
1. A. WARDELL, B.A.Sc., Toronto, Ont.
1. F. E. WATSON, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
3.*P. G. WELFORD, B.A.Sc., Guelph, Ont.
White Sewing Machine Co.
2. A. G. WHELER, B.A.Sc., Jackson's Point, Ont.
3. G. H. WILKES, B.A.Sc.,
On Overseas Service.
5.*E. R. WILLIAMS,
On Overseas Service.
3.*H. A. WILSON, Glenora, Ont.
Supt., J. C. Wilson & Co., Mechanical Engineers.
3. C. S. WOOD, Courtenay, B.C.
Electrical Engineer.
1. W. G. WORDEN, B.A.Sc., Oshawa, Ont.
Town Engineer.
1.*W. J. T. WRIGHT, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto
1. F. H. WRONG, B.A.Sc., D.L.S.,
On Overseas Service.
2. W. H. WYLIE, B.A.Sc.,
On Overseas Service.
3. H. K. WYMAN, Essex, Ont.
3. L. P. YORKE,
On Overseas Service.
1. S. YOUNG, B.A.Sc., D. & S.L.S., Regina, Sask.
Public Works Dept.
3.*A. YOUNG, B.A.Sc., Toronto, Ont.
Instructor, Technical High School.
1. W. E. ZINKAN, 865 24th St., Edmonton, Alta.
Dominion Land Surveyor.

Owing to change of course from three to four years, there were no graduates in 1912.

1913.

From this date onward "3" denotes Mechanical Engineering and "7" Electrical Engineering.

7.*R. J. ALLEN, B.A.Sc., Cleveland, Ohio.
Rolls-Royce Co.
3.*A. S. ANDERSON, B.A.Sc., (killed in action, France, 1916)
1.*C. R. AVERY, M.A.Sc., 361 Crawford St., Toronto, Ont.

*Degree with honours.

1913—*Continued.*

4.*L. C. M. BALDWIN, B.A.Sc.,
On Overseas Service.
1. F. W. BEATTY, B.A.Sc.,
On Overseas Service.
1.*W. B. BEATTY, B.A.Sc., O.L.S., Haliburton, Ont.
Beatty & Wilkins.
2. C. A. BELL, B.A.Sc., 19 Farnham Avenue, Toronto, Ont.
7. R. S. BELL, B.A.Sc., 10 Stair Ave., Toronto, Ont.
2. R. E. BINNS, B.A.Sc., 18 Dorville Rd., Lee, London, S.E.
1.*B. S. BLACK, B.A.Sc., 197 Madison Ave., Toronto, Ont.
1. D. BLAIN, B.A.Sc., 42 Clarendon Ave., Toronto, Ont.
7. E. R. BONTER, B.A.Sc., Montreal, Que.
Canadian Crocker-Wheeler Co.
7.*L. R. BRERETON, B.A.Sc.,
On Overseas Service.
4. B. BROWN, B.A.Sc., 305 Manning Chambers, Toronto, Ont.
Architect.
2. T. R. BUCHANAN, B.A.Sc., Thessalon, Ont.
7.*W. B. BUCHANAN, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. B. H. A. BURROWS, B.A.Sc., (killed in action, France, 1916).
2. W. B. CALDWELL, B.A.Sc.,
On Overseas Service.
1. O. L. CAMERON, B.A.Sc. (Died of wounds, France, 1918).
1. L. L. CAMPBELL, B.A.Sc., Orangeville, Ont.
3.*R. M. CARMICHAEL, B.A.Sc., Kenora, Ont.
1. G. M. CARRIE, B.A.Sc.,
On Overseas Service.
2. H. A. CLARK, B.A.Sc., Toronto, Ont.
6.*G. E. CLARKSON, B.A.Sc., Scunsthorpe, England.
Asst. Supt. Frodingham Iron & Steel Co.
3.*B. D. CLEGG, B.A.Sc., 295 Stewart St., Peterborough, Ont.
7. J. H. COLEMAN, B.A.Sc., 17 Farnham Ave., Toronto, Ont.
1.*G. M. COOK, B.A.Sc., Youngstown, Ohio.
Chief Estimator, Truscon Steel Co.
1. J. A. COOMBS, B.A.Sc., 393 Ossington Ave., Toronto, Ont.
4.*B. R. COON, B.A.Sc., Toronto, Ont.
Canadian Aeroplanes, Ltd.
2. W. T. CURTIS, B.A.Sc., Tillsonburg, Ont.
1. A. J. DATES, B.A.Sc., Detroit, Mich.
With Fisher Boddy Co.
3. H. D. DAVISON, B.A.Sc., Port Weller, Ont.
Section 1, Welland Ship Canal.
7. E. L. DEITCH, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
2.*R. W. DIAMOND, B.A.Sc., Anaconda, Mont.
Anaconda Mining Co.
7. W. G. DUNCAN, B.A.Sc. Port Dover, Ont.
1. F. R. FIDDES, B.A.Sc., Detroit, Mich.

*Degree with honours.

1913—*Continued.*

1. D. H. FLEMING, B.A.Sc., Toronto, Ont.
Sewers Dept. City Hall.
3. F. F. FOOTE, B.A.Sc., Port Dalhousie, Ont.
1.*J. S. GALBRAITH, B.A.Sc., 150 Albany Ave., Toronto, Ont.
2. W. H. GARNHAM, B.A.Sc., Cayuga, Ont.
1. A. M. GERMAN, B.A.Sc.,
On Overseas Service.
1. H. M. GOODMAN, B.A.Sc.,
On Overseas Service.
1. A. G. GRAY, B.A.Sc.,
On Overseas Service.
1.*E. R. GRAY, B.A.Sc., C.E., Hamilton, Ont.
City Engineer.
3. A. J. GRAY, B.A.Sc.
On Overseas Service.
7. J. P. HADCOCK, B.A.Sc., Peterboro, Ont.
Can. Gen. Elec. Co.
7. H. C. HARRIS, B.A.Sc.,
On Overseas Service.
1. H. A. HAWLEY, B.A.Sc., Toronto, Ont.
Lewis Construction Co.
1.*R. L. HEARN, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Com.
1.*H. J. HEINONEN, B.A.Sc., New York, N.Y.
Columbia University.
3.*R. A. HENRY, B.A.Sc., Collingwood, Ont.
Collingwood Shipbuilding Co.
7.*T. A. HILL, B.A.Sc., Ninga, Man.
1.*O. HOLDEN, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
1. J. T. HOWARD, B.A.Sc. (Died of wounds, France, 1918).
7.*T. F. HOWLETT, B.A.Sc.,
On Overseas Service.
1. E. T. IRESON, B.A.Sc., 144 Walmer Rd., Toronto, Ont.
1. G. R. JOHNSON, B.A.Sc.,
On Overseas Service.
1. R. L. JUNKIN, B.A.Sc., 165 Crescent Rd., Toronto, Ont.
7.*S. S. KELLY, B.A.Sc., Lambeth, Ont.
7. A. E. KERR, B.A.Sc., Hamilton, Ont.
Can. Westinghouse Co.
7. C. E. KILMER, B.A.Sc., 171 Crescent Rd., Toronto, Ont.
1. J. S. LAING, B.A.Sc.,
On Overseas Service.
7. A. LESLIE, B.A.Sc., 928 Second Ave. E., Owen Sound, Ont.
4.*H. D. LIVINGSTON, B.A.Sc. (Killed in action, August, 1918).
1.*K. F. MICKLEBOROUGH, B.A.Sc., Cornwall, Ont.
Dept. of Railways and Canals.
7.*G. J. MICKLER, B.A.Sc., Toronto, Ont.
Hydro-Electric Commission.
1. N. C. MILLMAN, B.A.Sc.
On Overseas Service.
1. F. J. MULQUEEN, B.A.Sc., Sao Paulo, Brazil.

*Degree with honours.

1913—*Continued.*

1.*W. C. MURDIE, M.A.Sc., D.L.S., F.R.G.S., Ottawa, Ont.
Department of Interior.
2. D. A. S. MUTCH, B.A.Sc., Timmins, Ont.
Hollinger Mines.
1.*H. R. MACKENZIE, B.A.Sc., Regina, Sask.
Inspecting Engineer, Board of Highway Commissioners.
1. A. R. MACPHERSON, B.A.Sc., Petrolia, Ont.
6.*K. S. MACLACHLAN, B.A.Sc., Toronto, Ont.
Dist. Organizer under Director of Technical Education.
1. W. H. MACTAVISH, B.A.Sc.
On Overseas Service.
1. T. V. MCCARTHY, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Comm.
4.*R. S. MCCONNELL, B.A.Sc.,
On Overseas Service.
1. W. L. MCFAUL, B.A.Sc.,
On Overseas Service.
2.*K. L. NEWTON, B.A.Sc., Copper Cliff, Ont.
Canadian Copper Co.
5.*C. J. OTTO, B.A.Sc., Toronto, Ont.
Gutta Percha and Rubber Mfg. Co.,
1.*N. F. PARKINSON, M.A.Sc., Ottawa, Ont.
Dept. Soldiers' Civil Re-establishment.
7.*J. W. PEART, B.A.Sc.,
On Overseas Service.
1.*E. PERRON, B.A.Sc., Metabetchouan, Que.
1. H. C. QUAIL, B.A.Sc. (Killed in action, February, 1918).
7*E. G. RATZ, B.A.Sc., Hamilton, Ont.
With Canadian Westinghouse Co.
1.*J. M. RIDDELL, B.A.Sc.
On Overseas Service.
1.*J. E. RITCHIE, B.A.Sc.,
On Overseas Service.
1.*C. S. ROBERTSON, M.A.Sc., Toronto, Ont.
With John ver Mehr Eng. Co., Ltd.
7.*C. C. ROUS, B.A.Sc., Royal Bank Bldg., Toronto, Ont.
Capt., Imperial Munitions Board, Head Inspector for Fuses.
7. C. H. RUSSELL, B.A.Sc., Hamilton, Ont.
Can. Westinghouse Co.
7.*A. A. SCARLETT, B.A.Sc., Mount Charles, Ont.
1.*L. SEWELL, B.A.Sc., Cedar Grove, Ont.
7.*M. C. SHARP, B.A.Sc.,
On Overseas Service.
3.*K. E. SHAW, B.A.Sc., Wallaceburg, Ont.
Dominion Sugar Co.
3.*F. R. SIMS, B.A.Sc., Ottawa, Ont.
Dept. of Customs.
2.*D. G. SINCLAIR, B.A.Sc., 145 Queen St., Sarnia, Ont.
4.*R. W. SOPER, B.A.Sc. (Killed in action, France, 1918).
1. W. A. SPELLMAN, B.A.Sc., Toronto, Ont.
City Engineer's Dept.
7.*J. M. STRATHY, B.A.Sc., (killed in action, 1916).
1. D. SUTHERLAND, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1913—*Continued.*

1. R. TASKER, B.A.Sc., 57 Duke Street, Toronto, Ont.
7.*D. J. THOMPSON, B.A.Sc., 86 Abbott Ave., Toronto, Ont.
1.*J. M. THOMPSON, B.A.Sc. Mount Healy, Ont.
2.*W. K. THOMPSON, B.A.Sc., Box 218, Trail, B.C.
7. T. E. TORRANCE, B.A.Sc.,
On Overseas Service.
2. R. M. TROW, B.A.Sc.,
On Overseas Service.
1.*W. G. URE, B.A.Sc., Woodstock, Ont.
1.* C. F. VON GUNTEN, B.A.Sc., Blenheim, Ont.
3. R. E. WATTS, B.A.Sc. (Died of scarlet fever while on active service, 1916).
3.*C. A. WEBSTER, B.A.Sc., Galt, Ont.
Sheldons, Limited.
4.*H. WEBSTER, B.A.Sc.,
On Overseas Service.
1. D. H. WEIR, B.A.Sc.
On Overseas Service.
1. W. S. WINTERS, B.A.Sc., 55 Bleecker St., Toronto, Ont.
1. R. F. B. WOOD, B.A.Sc., 116 Crescent Rd., Toronto, Ont.
7.*A. J. WRIGHT, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
7. R. B. YOUNG, B.A.Sc., Toronto, Ont.
With H.E.P.C.

1914

1. E. M. ABENDANA, B.A.Sc. (Died while on active service, Oct. 1918).
1.*F. C. ADSETT, B.A.Sc., Guelph, Ont.
1.*J. L. ALTON, B.A.Sc., Toronto, Ont.
Dept. of Public Works for Ontario.
2.*F. C. ANDREWS, B.A.Sc. (killed in action, France, 1915).
7. C. E. ARMER, B.A.Sc., 38 Palmerston Gardens, Toronto, Ont.
With Ewart & Jacob, Elec. Engrs.
2.*H. R. BANKS, B.A.Sc., 787 Markham St., Toronto, Ont.
1. E. L. BEDARD, B.A.Sc.,
On Overseas Service.
1.*H. J. BEDARD, B.A.Sc., Port Lambton, Ont.
1. J. T. BELCHER, B.A.Sc., Guelph, Ont.
With H.E.P.C.
1. S. G. BENNETT, B.A.Sc., 16 Howland Ave., Toronto, Ont.
1. P. V. BINNS, B.A.Sc. (Killed in action, France, 1918).
1.*J. M. BLYTH, B.A.Sc., R.R. No. 3, Durham, Ont.
5. A. R. BONHAM, B.A.Sc., 47 Harbord Street, Toronto, Ont.
Laboratory, Provincial Board of Health.
1.*J. H. W. BOWER, B.A.Sc., Ottawa, Ont.
Gen. Supt., Military Hospitals Comm.
3.*H. H. BROWN, B.A.Sc., Ottawa, Ont.
Steel Dept., Imperial Munitions Board.

*Degree with honours.

1914—*Continued.*

7.*W. D. BROWN, B.A.Sc., Owen Sound, Ont.
1.*D. H. CAMPBELL, B.A.Sc., Ottawa, Ont.
Topographical Surveys Branch, Dept. of Interior.
3.*H. M. CAMPBELL, B.A.Sc., St. Catharines, Ont.
Draftsman, Welland Ship Canal.
1.*J. J. CAMPBELL, B.A.Sc. (Died of wounds received in action, France, 1917).
6.*C. N. CANDEE, B.A.Sc., 39 South Drive, Toronto, Ont.
2. R. T. CARLYLE, B.A.Sc., Toronto, Ont.
2. J. M. CARTER, B.A.Sc.,
On Overseas Service.
2. E. V. CHAMBERS, B.A.Sc., 126 St. George St., Toronto, Ont.
1.*R. M. CHRISTIE, B.A.Sc., 9847 91st Ave., Edmonton South, Alta.
3. K. M. CLIPSHAM, B.A.Sc., Toronto, Ont.
Clipsham & Delamere.
7. C. E. B. CORBOULD, B.A.Sc.,
On Overseas Service.
3.*E. D. W. COURTICE, B.A.Sc., 107 Bay St. S., Hamilton, Ont.
1. J. W. CRASHLEY, B.A.Sc., 28 Madison Ave., Toronto, Ont.
7*A. W. CRAWFORD, B.A.Sc., Sarnia, Ont.
1.*W. CUTHBERTSON, B.A.Sc.,
On Overseas Service.
1. G. F. DALTON, B.A.Sc.,
On Overseas Service.
1.*R. DASHWOOD, B.A.Sc.
On Overseas Service.
1.*R D. DAVIDSON, B.A.Sc.,
On Overseas Service.
3. R. D. DELAMERE, B.A.Sc., 39 Heath St. W., Toronto, Ont.
1.*F. W. DOUGLAS, B.A.Sc., 276 Palmerston Ave., Toronto, Ont.
7. H. C. EDWARDS, B.A.Sc., Toronto, Ont.
7.*H. F. ELLIOTT, B.A.Sc., Norwood, Ont.
1. J. A. ELLIOTT, B.A.Sc., Box 215, Nelson, B.C.
2.*S. D. ELLIS, B.A.Sc. (Died after operation, while on overseas service, 1916).
1.*H. E. EYRES, B.A.Sc., Peterborough, Ont.
1.*O. M. FALLS, B.A.Sc., Toronto, Ont.
With James, Loudon & Hertzberg, Ltd.
7. D. G. FERGUSON, B.A.Sc., 36 Owaissa St., St. Thomas, Ont.
1. G. O. FLEMING, B.A.Sc.,
On Overseas Service.
2. J. S. FLEMING, B.A.Sc. (Killed in action, France, 1916).
1.*J. L. FOREMAN, B.A.Sc.,
On Overseas Service.
7.*H. J. FRANKLIN, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
5.*J. G. G. FROST, B.A.Sc., Welland, Ont.
Asst. Chemist, Metals-Chemical Co.
1. C. H. R. FULLER, B.A.Sc., 106 Kendal Ave., Toronto, Ont.
7.*E. I. GILL, B.A.Sc., Victoria Harbour, Ont.
2.*J. R. GILL, B.A.Sc., Sudbury, Ont.

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*Degree with honours.

1914—*Continued.*

1. R. W. GOUINLOCK, B.A.Sc.
On Overseas Service.
7. C. I. GRIERSON, B.A.Sc., Hamilton, Ont.
With Imperial Oil Company.
3.*W. H. HALL, B.A.Sc., 813 Water St., Peterborough, Ont.
3.*G. H. HALLY, B.A.Sc., Toronto, Ont.
Demonstrator in Mechanical Engineering, University of Toronto.
1.*J. J. HANNA, B.A.Sc., 350 15th Ave. W., Calgary, Alta.
1. J. H. HAWES, B.A.Sc.
On Overseas Service.
1.*L. T. HAYMAN, B.A.Sc.
On Overseas Service.
1.*B. B. HOGARTH, B.A.Sc.,
On Overseas Service.
4. E. E. H. HUGLI, B.A.Sc.,
On Overseas Service.
1.*S. A. HUSTWITT, B.A.Sc., 76 Roncesvalles Ave., Toronto, Ont.
2. W. HUTCHINGS, B.A.Sc., Cobalt, Ont.
Chemist, O'Brien Mine.
7.*A. S. JANNATI, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
1.*R. P. JOHNSON, B.A.Sc., Niagara Falls, Ont.
With Hydro-Electric Power Commission.
7.*J. I. KAMMAN, B.A.Sc.,
On Overseas Service.
1. J. KAY, B.A.Sc. (Died while on active service, 1918).
4. N. G. KEEFER, B.A.Sc., West Toronto, Ont.
3. H. S. KERBY, B.A.Sc.,
On Overseas Service.
3. J. A. KERR, B.A.Sc., Toronto, Ont.
Polson Iron Works.
7. G. E. KEWIN, B.A.Sc., Toronto, Ont.
Canadian Inspection Co.
1. J. A. KNIGHT, B.A.Sc.,
On Overseas Service.
2.*S. A. LANG, B.A.Sc. (Died at St. Johns, Que., while on active service, Oct. 1918).
7.*C. W. LATIMER, B.A.Sc., Penticton, B.C.
1.*R. E. LINDSAY, B.A.Sc., Bolton, Ont.
7. N. H. LORIMER, B.A.Sc., 39 Wells Hill Ave., Toronto, Ont.
5.*O. G. LYE, B.A.Sc., Ottawa, Ont.
Laboratories Inland Revenue Dept.
2.*W. A. MACDONALD, B.A.Sc. (deceased).
3. B. MACKENDRICK, B.A.Sc.,
On Overseas Service.
2.*H. J. MACKENZIE, B.A.Sc.
On Overseas Service.
7.*A. M. MACKENZIE, B.A.Sc.,
On Overseas Service.
1. H. N. MACPHERSON, B.A.Sc., 2,306 Rose St., Regina, Sask.
3. A. H. MACQUARRIE, B.A.Sc.
On Overseas Service.
7.*J. A. MARSHALL, B.A.Sc., Ryckmans, Ont.

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*Degree with honours.

1914—*Continued.*

1.*J. A. P. MARSHALL, B.A.Sc.,
On Overseas Service.
7.*R. G. MATTHEWS, B.A.Sc.,
On Overseas Service.
3.*H. W. MAXWELL, B.A.Sc., 221 Wellington St., St. Mary's, Ont.
Geological Survey.
1.*R. C. MCDONALD, B.A.Sc., Ottawa, Ont.
1. S. B. MCGILL, B.A.Sc., Toronto, Ont.
7. D. L. MCLAREN, B.A.Sc., Peterborough, Ont.
With Canadian General Electric Co.
2. P. W. MEAHAN, B.A.Sc.,
On Overseas Service.
1.*F. C. MECHIN, B.A.Sc., Halifax, N.S.
Engineer, Imperial Oil Co.
1.*W. G. MILLAR, B.A.Sc., Toronto, Ont.
With Underwriters' Association.
1.*A. S. MILLER, B.A.Sc.,
On Overseas Service.
6.*W. E. MILLIGAN, B.A.Sc.,
On Overseas Service.
7.*P. H. MILLS, B.A.Sc.,
On Overseas Service.
1.*J. S. MITCHELL, B.A.Sc., Lucknow, Ont.
1. J. R. MONTAGUE, B.A.Sc., 633 Coristine Bldg., Montreal, Que.
With A. R. Henry, M.E.
6. D. MORRISON, B.A.Sc., Bowmanville, Ont.
1. G. J. MULLINS, B.A.Sc., Toronto, Ont.
Harbour Commissioners.
1.*E. P. MUNTZ, B.A.Sc., St. Catharines, Ont.
7.*C. L. NICHOLSON, B.A.Sc., 199 Concord Ave., Toronto, Ont.
Toronto Hydro-Electric System.
1.*J. B. NICHOLSON, B.A.Sc., Hamilton, Ont.
J. B. Nicholson, Ltd., Engineers & Contractors.
1.*C. NOECKER, B.A.Sc., Hamilton, Ont.
With Canadian Inspection Co.
1. J. A. OWENS, B.A.Sc., Toronto, Ont.
1. A. H. PARKER, B.A.Sc.,
On Overseas Service.
1.*R. G. PATTERSON, B.A.Sc.
On Overseas Service.
7.*J. D. PEART, B.A.Sc., Nelson, Ont.
1. C. W. PENNINGTON, B.A.Sc., Dundas, Ont.
1.*C. V. PERRY, B.A.Sc. (Killed in action, 1917).
5.*W. E. PHILLIPS, B.A.Sc.,
On Overseas Service.
8. G. O. PHILP, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
1. P. H. RANEY, B.A.Sc. (Killed in action, Belgium, 1917).
1. R. H. RICE, B.A.Sc.,
On Overseas Service.
7. A. S. ROBERTSON, B.A.Sc., Toronto, Ont.
With H.E.P.C.

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*Degree with honours.

1914—*Continued*

4.*J. M. ROBERTSON, B.A.Sc.,
On Overseas Service.
7. H. D. ROTHWELL, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Commission.
1. F. S. RUTHERFORD, B.A.Sc., Toronto, Ont.
Dept. Soldiers' Civil Re-establishment under Major Anthes.
3.*J. G. SCOTT, B.A.Sc. (Died while on overseas service, 1918).
7.*F. M. SERVOS, B.A.Sc., Vancouver, B.C.
Tudhope Electro Metals, Ltd.
1.*H. L. SHEPPARD, B.A.Sc., Coldwater, Ont.
1. N. E. D. SHEPPARD, B.A.Sc., Ottawa, Ont.
Water Power Branch, Dept. of Interior.
1. S. SHUPE, B.A.Sc., Dunnville, Ont.
County Engineer.
6. A. W. SIME, B.A.Sc., 212 Heath St. W., Toronto, Ont.
1.*B. N. SIMPSON, B.A.Sc. Toronto, Ont.
With Hydro-Electric Power Commission
1. C. E. SINCLAIR, B.A.Sc.
On Overseas Service.
1.*J. B. SKAITH, B.A.Sc.,
On Overseas Service.
4.*W. C. SKINNER, B.A.Sc., 1022 Cass Ave., Detroit, Mich
1. H. M. SMITH, B.A.Sc. (deceased).
2. G. M. SMYTH, B.A.Sc., Merritton, Ont.
1.*N. L. SOMERS, B.A.Sc., Sault Ste. Marie, Ont.
Coke Plant Engr., Algoma Steel Corp.
7. R. O. STANDING, B.A.Sc.,
On Overseas Service.
7.*E. C. R. STONEMAN, B.A.Sc.,
On Overseas Service.
1. I. R. STROME, B.A.Sc., 555 Eleventh Street, Brandon, Man.
3. S. G. TACKABERRY, B.A.Sc., Ottawa, Ont.
Chief Mechanical Engineer, Public Works Department.
2. J. S. TAYLOR, B.A.Sc. (Killed in action, France, 1916).
1.*C. N. TEMES, B.A.Sc., 432 College Street, Toronto, Ont.
3.*E. H. TENNENT, B.A.Sc., 456 Ridout Street, London, Ont.
1. J. A. TILSTON, B.A.Sc.,
On Overseas Service.
1.*G. E. TRELOAR, M.A.Sc., Toronto, Ont.
7.*W. S. TULL, B.A.Sc., Louisburg, N.S.
Marconi Wireless Telegraph Co.
6. E. A. TWIDALE, B.A.Sc. (Killed in action, France, 1917).
1.*F.T. VAN DYKE, B.A.Sc., St. Catharines, Ont.
Section 1, *Welland Ship Canal.*
3.*M. F. VERITY, B.A.Sc. Brantford, Ont.
1.*H. O. WADDELL, B.A.Sc., Port Hope, Ont.
1.*H. W. WAGNER, B.A.Sc., Copper Cliff, Ont.
International Nickel Co.
1.*H. D. M. WALLACE, B.A.Sc. (Killed in action, 1917).
1. P. L. WHITLEY, B.A.Sc., Gorrie, Ont.
6.*A. E. WIGLE, B.A.Sc., Nobel, Ont.
Canadian Explosives Limited.

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*Degree with honours.

1914—*Continued.*

7.*J. A. H. WIGLE, B.A.Sc. — Kingsville, Ont.
4.*A. C. WILSON, B.A.Sc., — Toronto, Ont.
Dept. Soldiers' Civil Re-establishment.
1. H. P. WILSON, B.A.Sc., — Toronto, Ont.
Canadian Inspection Co.
2.*R. W. YOUNG, B.A.Sc., — Bothwell, Ont.

1915

1. L. S. ADLARD, B.A.Sc.,
On Overseas Service.
1. A. C. ANDERSON, B.A.Sc., — 15 Woolfrey Ave., Toronto, Ont.
1.*G. A. ARKSEY, B.A.Sc.,
On Overseas Service.
2. R. M. ARTHUR, B.A.Sc.,
On Overseas Service.
1. F. D. AUSTIN, B.A.Sc.,
On Overseas Service.
7. W. V. BALL, B.A.Sc., — 96A Gothic Ave., Toronto, Ont.
7.*T. R. BANBURY, B.A.Sc., — Ingersoll, Ont.
7. V. A. BEACOCK, B.A.Sc.,
On Overseas Service.
1.*P. BENNETT, B.A.Sc.,
On Overseas Service.
7.*H. M. BLACK, B.A.Sc., — Toronto, Ont.
Shell Dept., Universal Tool Steel Co.
7. W. H. BONUS, B.A.Sc., — Toronto, Ont.
Asst. Superintendent, University of Toronto.
6.*J. E. BREITHAUPT, B.A.Sc. — Kitchener, Ont.
With Breithaupt Tanning Co.
1.*E. D. G. BROUSE, B.A.Sc.,
On Overseas Service.
1.*L. R. BROWN, B.A.Sc., — Sault Ste. Marie, Ont.
Toronto Chemical Co.
1.*F. M. BUCHANAN, B.A.Sc., — Sydney, N.S.
With Dominion Tar and Chemical Co.
7. H. C. BUDD, B.A.Sc.,
On Overseas Service.
4. H. J. BURDEN, B.A.Sc.,
On Overseas Service.
1. F. N. D. CARMICHAEL, B.A.Sc., — 213 Cottingham St., Toronto, Ont.
4.*R. W. CATTO, B.A.Sc.
On Overseas Service.
1. R. M. COCKBURN, B.A.Sc.,
On Overseas Service.
1.*J. D. COOK, B.A.Sc. (Killed in action, 1918).
1.*A. B. CREALOCK, B.A.Sc., — Toronto, Ont.
Willys-Overland, Ltd.
1.*W. R. DA COSTA, B.A.Sc.,
On Overseas Service.
1. N. H. DANIEL, B.A.Sc. — 24 Prince Arthur Ave., Toronto, Ont
Dept. Soldiers' Civil Re-establishment.
3.*C. G. DAVEY, B.A.Sc., — London, Ont.
Canadian Inspection Co.
7.*G. P. DAVIDSON, B.A.Sc. (Killed in action, 1917).

*Degree with honours.

1915—*Continued.*

4. J. J. DAVIDSON, B.A.Sc., Humber Bay, Ont.
7. W. A. DEAN, B.A.Sc.,
On Overseas Service.
1.*E. V. DEVERALL, B.A.Sc.,
On Overseas Service.
7.*J. DIBBLEE, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Comm.
1.*W. L. DICKSON, B.A.Sc., 83 St. Clair Ave. E., Toronto, Ont.
Advertising Scales Ltd.
1.*G. A. DOWNEY, B.A.Sc., Orillia, Ont.
4. G. R. EDWARDS, B.A.Sc.,
On Overseas Service.
7.*R. V. ELLIOTT, B.A.Sc.,
On Overseas Service.
2. E. R. EMMERSON, B.A.Sc.,
On Overseas Service.
1. A. C. EVANS, B.A.Sc., Toronto, Ont.
Instructor, Invalided Soldiers' Commission.
1. H. S. FALCONER, B.A.Sc. (deceased).
7. D. T. FLANNERY, B.A.Sc., Deloro, Ont.
Deloro Mining and Reduction Co.
1. J. W. H. FORD, B.A.Sc., London, Ont.
1.*W. R. FRASER, B.A.Sc., Allandale, Ont.
With G. T. Ry.
1. W. G. FRENCH, B.A.Sc., 368 Markham St., Toronto, Ont.
1.*W. J. FULTON, B.A.Sc., Toronto, Ont.
G. S. Abrey, O.L.S.
1. R. D. GALBRAITH, B.A.Sc., Toronto, Ont.
Dept. Soldiers' Civil Re-establishment.
1. C. N. GEALE, B.A.Sc.,
On Overseas Service.
6. L. G. GLASS, B.A.Sc.,
On Overseas Service.
1. G. A. GOODERHAM, B.A.Sc.,
On Overseas Service.
7.*W. H. R. GOULD, B.A.Sc. (Killed in action, 1918).
4.*T. S. GRAHAM, B.A.Sc.
On Overseas Service.
1.*E. R. GRANGE, B.A.Sc.,
On Overseas Service.
1. E. D. GRAY, B.A.Sc., Toronto, Ont.
Imperial Oil Co.
7. G. D. GRAY, B.A.Sc., Welland, Ont.
Union Carbide Co.
3. J. GRAY, B.A.Sc.,
On Overseas Service.
7. G. E. GRIFFITHS, B.A.Sc.,
On Overseas Service.
2. M. S. HAAS, B.A.Sc.,
On Overseas Service.
2. D. S. HALFORD, B.A.Sc., Humboldt, Ariz.
Consolidated Arizona Smelting Co.
2.*W. T. HALL, B.A.Sc. (Killed in action, France, 1917).
2 *J. E. HANLON, B.A.Sc.,
On Overseas Service.

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*Degree with honours.

1915—*Continued.*

1. C. HAYWARD, B.A.Sc., Toronto, Ont.
With Kerry & Chace.
2.*L. T. HIGGINS, B.A.Sc., Rancagua, Chili.
Braden Copper Co.
1.*C. E. HOGARTH, B.A.Sc.,
On Overseas Service.
7. T. P. IRELAND, B.A.Sc., Hamilton, Ont.
Canadian Inspection Co.
7.*G. A. IRONSIDE, B.A.Sc.
On Overseas Service.
1.*C. W. H. JACKSON, B.A.Sc.,
On Overseas Service.
7. K. A. JEFFERSON, B.A.Sc., London, Ont.
Empire Mfg. Co.
1.*G. W. F. JOHNSTON, B.A.Sc.,
On Overseas Service.
7. C. M. JONES, B.A.Sc., Toronto, Ont.
2. R. D. JONES, B.A.Sc., 300 Spadina Rd. Hill, Toronto, Ont.
1. E. H. JUPP, B.A.Sc., Schumacher, Ont.
Engineering Staff, McIntyre Mine.
7. C. R. KEYS, B.A.Sc., Buffalo, N.Y.
Curtiss Aeroplanes and Motors Ltd.
5.*H. KOHL, B.A.Sc., Longford, Ont.
Standard Chemical Co.
1.*R. E. LAIDLAW, B.A.Sc., Toronto, Ont.
With McCarthy & McCarthy.
1.*G. J. LAMB, B.A.Sc., 315 St. Vincent St., Port Arthur, Ont.
Asst. City Engineer.
7.*G. W. LAWRENCE, B.A.Sc.,
On Overseas Service.
1.*H. O. LEACH, B.A.Sc. (Killed in action, France, 1918).
3.*R. H. LLOYD, B.A.Sc., Wingham, Ont.
1. W E. LOCKHART, B.A.Sc. (Killed in action, France, 1917).
1.*W. E. LONGWORTHY, B.A.Sc., 2035 Hamilton St., Regina, Sask.
1.*C. T. LOUNT, B.A.Sc., Regina, Sask.
1.*R. G. LYE, B.A.Sc., 49 Dupont Street, Toronto, Ont.
1.*C. A. MACDONALD, B.A.Sc.,
On Overseas Service.
2. I. M. MACDONELL, B.A.Sc., 35 Prince Arthur Ave., Toronto, Ont.
1.*H. E. MACPHERSON, B.A.Sc.,
On Overseas Service.
1.*W. R. MCCAFFREY, B.A.Sc., 45 Albermarle Ave., Toronto, Ont.
National Fire Proofing Co. of Canada, Ltd.
1.*C. R. MCCORT, B.A.Sc., Bolton, Ont.
1.*J. P. MCDONALD, B.A.Sc., Brantford, Ont.
McDonald's Coal Office.
1.*K. D. MCDONALD, B.A.Sc., Toronto, Ont.
Dept. Soldiers' Civil Re-establishment.
3. *W. R. MCGIE, B.A.Sc., Walkerville, Ont.
Ford Motor Car Co.
1.*D. F. MCGUGAN, B.A.Sc.,
On Overseas Service.

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*Degree with honours.

1915—*Continued.*

7. J. S. McINTYRE, B.A.Sc., Toronto, Ont.
With H.E.P.C.
1. E. V. McKAGUE, B.A.Sc.,
On Overseas Service.
7. E. T. MARTIN, B.A.Sc., Waddington, N.Y.
1.*W. H. MEITZ, B.A.Sc., Detroit, Mich.
Albert Albrecht Co.
2. F. L. MILLS, B.A.Sc.
On Overseas Service.
1.*G. MITCHELL, B.A.Sc.
On Overseas Service.
1. J. T. MOGAN, B.A.Sc., Guelph, Ont.
Dept. Soldiers' Civil Re-establishment.
7.*E. M. MONTEITH B.A.Sc., Toronto, Ont.
Imperial Oil Co.
4.*A. MORRIS, B.A.Sc.,
On Overseas Service.
1. B. M. MORRIS, B.A.Sc. (Killed in action, France, 1917).
5.*W. D. MORRIS, B.A.Sc., Gretna, England
Chemical Engineer, H.M. Explosives Factory.
2. J. M. MUIR, B.A.Sc., 88 Balmoral Ave., Toronto, Ont.
1.*M. A. NEILSON, B.A.Sc., Toronto, Ont.
Inspector, W. H. Banfield & Sons.
1.*H. S. NICKLIN, B.A.Sc.,
On Overseas Service.
1. E. B. O'CONNOR, B.A.Sc., Toronto, Ont.
1. W. M. OMAND, B.A.Sc., Armco, Middleton, Ohio.
East Side Works.
1.*R. A. PAUL, B.A.Sc.,
On Overseas Service.
3.*A. N. PAYNE, B.A.Sc., Toronto, Ont.
Mechanical Engineer, Willard's Chocolates, Ltd.
1. L. P. PEARCE, B.A.Sc., Yorkton, Sask.
1.*H. M. PECK, B.A.Sc. (Died in France, 1918).
1. S. M. PETERKIN, B.A.Sc.,
On Overseas Service.
1.*C. F. PORTER, B.A.Sc., Windsor, Ont.
Canadian Steel Corporation.
1.*J. E. PORTER, B.A.Sc., Wingham, Ont.
2. W. D. POWELL, B.A.Sc., Sudbury, Ont.
7. W. F. P. PURDY, B.A.Sc., Wardsville, Ont.
1. W. E. RALEY, B.A.Sc. (Died of wounds received in action, 1916).
1. C. C. RANCE, B.A. Sc., Toronto, Ont.
Dept. Soldiers' Civil Re-establishment.
1.*G. RANKIN, B.A.Sc.,
On Overseas Service.
1. W. B. REDMAN, B.A.Sc., Birch Cliff, Ont.
3.*F. G. REID, B.A.Sc., Cleveland, Ohio.
Frantz Premier Co.
6. P. J. RELYEA, B.A.Sc., London, England.
Imperial Munitions Board.
1.*A. A. RICHARDSON, B.A.Sc.
On Overseas Service.

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* Degree with honours.

1915—*Continued.*

3.*A. S. ROBERTSON, B.A.Sc.,
On Overseas Service.
1. J. T. ROSE, B.A.Sc.
On Overseas Service.
7.*A. C. ROSS, B.A.Sc., Cleveland, Ohio.
With Rolls-Royce Co.
2. J. ROSS, B.A.Sc., Toronto, Ont.
1.*H. M. ROWE, B.A.Sc.,
On Overseas Service.
4. G. W. RUTTER, B.A.Sc., Toronto, Ont.
With York Knitting Mills.
7.*E. W. SAVAGE, B.A.Sc., Navan, Ont.
7. A. G. SCOTT, B.A.Sc., Niagara Falls, Ont.
1.*E. H. SCOTT, B.A.Sc., 725 St. Clair Ave. W., Toronto, Ont.
With C.N. Ry.
1.*R. G. SCOTT, B.A.Sc., 33 Garnock Ave., Toronto, Ont.
Geological Survey
7. N. F. SEYMOUR, B.A.Sc., Essex, Ont.
1.*J. H. SHAW, B.A.Sc., Toronto, Ont.
With T. Eaton Co.
1. J. S. SHEEHY, B.A.Sc., Peterborough, Ont.
R. Sheehy & Sons.
3. W. G. SHIER, B.A.Sc. (Died of wounds received in action, 1916).
1.*C. N. SIMPSON, B.A.Sc., Toronto, Ont.
1. R. B. SINCLAIR, B.A.Sc. (Died of pneumonia in England while on overseas service, 1919).
3. A. H. SMYTH, B.A.Sc., Strathroy, Ont.
7.*W. A. STEEL, B.A.Sc.,
On Overseas Service.
2. J. B. STITT, B.A.Sc., Rancagua, Chili.
Braden Copper Co.
3. J. D. STONE, B.A.Sc., 43 Grand Ave., Chatham, Ont.
7.*G. C. STOREY, B.A.Sc., Wawanesa, Man.
2.*J. E. C. STROUD, B.A.Sc., Anyox, B.C.
With Granby Consol'd Mining and Smelting Co.
7.*A. N. SUHLER, B.A.Sc., Pt. Edward, Ont.
7. A. N. TAYLOR, B.A.Sc., Toronto, Ont.
Canadian Inspection Co.
1. L. B. TILLSON, B.A.Sc., Bracebridge, Ont.
1. J. A. TOM, B.A.Sc., Goderich, Ont.
5.*W. UFFELMANN, B.A.Sc., Montreal, Que.
Canadian Consolidated Rubber Co.
7.*A. L. WARD, B.A.Sc.
On Overseas Service.
1.*F. E. WEIR, B.A.Sc., Burford, Ont.
1.*C. W. WEST, B.A.Sc.
On Overseas Service.
1. J. N. WILLIAMS, B.A.Sc.,
On Overseas Service.
1.*J. C. WILSON, B.A.Sc., Wingham, Ont.
1.*H. A. WOOD, B.A.Sc.
On Overseas Service.
7. H. K. WYMAN, B.A.Sc.,
On Overseas Service.

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*Degree with honours.

1916.

1. E. B. ALLAN, B.A.Sc., La Tuque, Que.
Engr., Logging Div., Laurentide Co. of Grand Mere
7. F. W. BALL, B.A.Sc., Toronto, Ont.
Instructor, Invalided Soldiers' Commission.
1. L. F. BARNES, B.A.Sc.,
On Overseas Service.
1. B. W. BEMROSE, B.A.Sc., Bradford, Ont.
5.*W. G. BIRRELL, B.A.Sc.,
On Overseas Service.
8.*D. BOYD, B.A.Sc., 348 Albany Ave., Toronto, Ont.
3. H. E. BREULS, B.A.Sc., Toronto, Ont.
Canadian Aeroplanes, Ltd.
5.*N. B. BROWN, B.A.Sc., Shawinigan, Que.
Shawinigan Electro Metals Co.
3. J. R. CHAPMAN, B.A.Sc. (killed in action, France, 1917).
7.*K. CUMMING, B.A.Sc., Glace Bay, N.S.
Marconi Wireless Telegraph Co.
3. J. N. CUNNINGHAM, B.A.Sc. (killed in action, France, 1917).
1. R. S. DALE, B.A.Sc., Toronto, Ont.
Paterson Mfg. Co.
7.*L. G. DANDENO, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Commission.
3. J. L. DELISLE, B.A.Sc., Chicoutimi, Que.
With Chicoutimi Pulp Co.
1. W. L. DOBBIN, B.A.Sc., 22 Classic Ave., Toronto, Ont.
1. J. H. EASTWOOD, B.A.Sc.,
On Overseas Service.
7. R. L. FLEGG, B.A.Sc., Montreal, Que.
1. D. B. GARDNER, B.A.Sc., 72 Tyrrel Ave., Toronto, Ont.
7.*E. G. GURNETT, B.A.Sc., Toronto, Ont
With Hydro-Electric Power Commission.
1.*M. GUROFSKY, B.A.Sc. Box 550, Timmins, Ont.
1. G. C. HAGEDORN, B.A.Sc.,
On Overseas Service.
1. R. M. HARE, B.A.Sc., 247 Brunswick Ave., Toronto, Ont.
1. L. W. HARRON, B.A.Sc., 869 Bathurst St., Toronto, Ont.
1. C. E. HASTINGS, B.A.Sc., 252 Russell Hill Road, Toronto, Ont.
4. R. T. C. HOIDGE, B.A.Sc., 560 Dupont Street, Toronto, Ont.
7. S. HUBBERT, B.A.Sc.
On Overseas Service.
1. K. B. JACKSON, B.A.Sc.,
On Overseas Service.
7.*H. C. KARN, B.A.Sc., Toronto, Ont.
Hydro-Electric Power Comm.
7. G. F. KING, B.A.Sc.,
On Overseas Service.
1. J. R. KIRBY, B.A.Sc. (Accidentally killed while on active service, England, 1918).
1. R. W. KIRBY, B.A.Sc.,
On Overseas Service.
3. R. W. KIRN, B.A.Sc.,
On Overseas Service.
6. S. J. KRUG, B.A.Sc., Chesley, Ont.

*Degree with honours.

1916—*Continued.*

1. L. A. C. LEE, B.A.Sc., Parliament Bldgs., Toronto, Ont.
2.*B. A. McCRODAN, B.A.Sc., Miami, Ariz.
International Smelting Co.
3. R. A. MACDONALD, B.A.Sc., 220 Church St., Stratford, Ont.
1.*O. MARGISON, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1.*W. B. MITCHELL, B.A.Sc., 150 Wharncliffe Rd., London, Ont.
1.*C. H. NEY, B.A.Sc.,
On Overseas Service.
3. J. C. NEWCOMBE, B.A.Sc. (Killed in action, France, 1918).
7. G. E. NOTT, B.A.Sc.,
On Overseas Service.
1. E. A. O'CALLAGHAN, B.A.Sc., Cornwall, Ont.
6.*C. E. OLIVER, B.A.Sc., Quyon, Que.
Canadian Wood Molybdenite Co.
1. N. L. POWELL, B.A.Sc., Delhi, Ont.
1. J. E. PRINGLE, B.A.Sc.,
On Overseas Service.
7. J. RICHMOND, B.A.Sc., Montreal, Que.
Northern Electric Co.
1. H. C. ROSE, B.A.Sc.,
On Overseas Service.
1.*S. R. ROSS, B.A.Sc., 175 Brunswick Ave., Toronto, Ont.
7. S. W. ROSS, B.A.Sc., Bronx, N.Y.
New York and Queens Electric Light and Power Co.
3.*J. P. RUSSELL, B.A.Sc., 27 Whitney Ave., Toronto, Ont.
1. W. B. SCOTT, B.A.Sc., 764 Logan Ave., Toronto, Ont.
1.*R. L. SEABORNE, B.A.Sc., Box 174, Quebec, Que.
Manager, Laurentian Forest Production Ass'n.
1.*R. L. SIEVEWRIGHT, B.A.Sc., 304 Hogarth Ave., Detroit, Mich.
4. J. L. SKINNER, B.A.Sc., 1022 Cass Ave., Detroit, Mich.
7. W. A. SMELSER, B.A.Sc.,
On Overseas Service.
7. C. A. SMITH, B.A.Sc., Timmins, Ont.
Hollinger Consolidated Gold Mines.
1. W. H. STARK, B.A.Sc., 74 Walmer Road, Toronto, Ont.
1.*J. A. SUREDA, B.A.Sc., Utuado, Porto Rico.
1. J E. TREMAYNE, B.A.Sc.,
On Overseas Service.
5.*F. W. WARD, B.A.Sc., Toronto, Ont.
Laboratory Attendant, Dept. of Biochemistry, University of Toronto.
1.*R. C. WARD, B.A.Sc., Toronto, Ont.
Toronto Iron Works.
7. A. R. WELLS, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Comm.
7.*H. S. WEPPLER, B.A.Sc., Toronto, Ont.
With Hydro-Electric Power Comm.
7. A. E. WIDDICOMBE, B.A.Sc. (deceased).

*Degree with honours.

1917.

1.*H. A. BABCOCK, B.A.Sc., Chatham, Ont.
Canadian DesMoines Field Co.
4. J. BANIGAN, B.A.Sc., Toronto, Ont.
Banigan, Mathers & Thompson.
1.*A. E. BERRY, B.A.Sc.,
On Overseas Service.
1.*R. S. C. BOTHWELL, B.A.Sc., Toronto, Ont.
7. H. S. BROWN, B.A.Sc.,
On Overseas Service.
7. S. W. BUMSTEAD, B.A.Sc., St. Louis, Mo.
Century Electric Co.
1.*F. C. CHRISTIE, B.A.Sc.,
On Overseas Service.
7. J. C. COLLERAN, B.A.Sc., 280 Park St., Port Arthur, Ont.
1. E. H. CORMAN, B.A.Sc., R.R. No. 5, Hamilton, Ont.
5.*J. V. DICKSON, B.A.Sc., Toronto, Ont.
Research Assistant, School of Engineering Research, University of Toronto.
1. J. A. FRASER, B.A.Sc.,
On Overseas Service.
7. J. I. GRAM, B.A.Sc., Weston, Ont.
1. W. K. GREATREX, B.A.Sc., Toronto, Ont.
Imperial Munitions Board.
2. G. HANMER, B.A.Sc., Ralph, Sask.
3. A. B. HARRIS, B.A.Sc., 974 Danforth Ave., Toronto, Ont.
1. R. W. HARRIS, B.A.Sc., Toronto, Ont.
C. H. & P. H. Mitchell.
5. A. J. HOLDEN, B.A.Sc., Toronto, Ont.
British Acetones Toronto, Ltd.
1.*R. W. HURLBURT, B.A.Sc., Central Y.M.C.A., Toronto, Ont.
7. G. F. HUTCHESON, B.A.Sc., Huntsville, Ont.
7. L. LEVESQUE, B.A.Sc. (deceased).
3. S. G. MCCANDLISH, B.A.Sc., 21 Smith Ave., Hamilton, Ont.
2.*H. L. MCCLELLAND, B.A.Sc., Wilberforce, Ont.
Mill Supt., Molybdenum Products Co.
3. P. E. MCILHARGEY, B.A.Sc.,
On Overseas Service.
5. G. G. MACDONALD, B.A.Sc., Sault Ste. Marie, Ont.
Imperial Ministry of Munitions.
1.*R. C. MANNING, B.A.Sc., 203 Hunter St. W., Hamilton, Ont.
4.*A. S. MATHERS, B.A.Sc., Toronto, Ont.
Banigan, Mathers & Thompson.
1. J. E. O'BRIEN, B.A.Sc.,
On Overseas Service.
7.*W. A. R. OFFERHAUS, B.A.Sc.,
On Overseas Service.
1. H. A. PARR, B.A.Sc., Calgary, Alta.
1.*R. D. RATZ, B.A.Sc., 14 Kennedy Ave., West Toronto, Ont.
Canadian Inspection & Testing Laboratory
1. E. E. SMITH, B.A.Sc.,
On Overseas Service.
7. E. W. SMITHSON, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1917—*Continued.*

3.*A. M. SNIDER, B.A.Sc., Sherbrooke, Que.
Can. Ingersoll Rand Co.
1. R. M. SPEIRS, B.A.Sc., Toronto, Ont.
With Canadian Aeroplanes, Ltd.
3. A. W. SWAN, B.A.Sc., Sherbrooke, Que.
Can. Ingersoll Rand Co.
1. A. P. THOMSON, B.A.Sc., Toronto, Ont.
Demonstrator in Drawing, University of Toronto.
1.*C. E. TILSTON, B.A.Sc., 156 Glenholme Ave., Toronto, Ont.
With Willys-Overland, Ltd.
7. O. W. TITUS, B.A.Sc.,
On Overseas Service.
2. B. C. TOMLINSON, B.A.Sc., Creighton Mines, Ont.
1.*V. TOPPING, B.A.Sc.,
On Overseas Service.
7.*A. A. TUFFORD, B.A.Sc.,
On Overseas Service.
7. H. A. TUTTLE, B.A.Sc. 61 Main St., Niagara Falls, Ont.
5. E. J. TYRRELL, B.A.Sc., Toronto, Ont.
Research Chemist, T. Eaton Co.
4.*H. R WATSON, B.A.Sc., Toronto, Ont.
Architect, James, Loudon & Hertzberg, Ltd.
1. G. WOOD, B.A.Sc.,
On Overseas Service.

1918

6.*C. C. ANDERSON, B.A.Sc., Windsor, Ont.
7. J. G. BALLINGER, B.A.Sc., Streetsville, Ont.
7.*C. K. DUFF, B.A.Sc., Toronto, Ont.
Research Assistant, School of Engineering Research, University of Toronto.
1. F. D. ELLIS, B.A.Sc., 55 Lee Ave., Toronto, Ont.
Sarnia Bridge Co., Ltd.
1. H. W. J. FAIRCLOUGH, B.A.Sc.,
On Overseas Service.
7. R. A. FRASER, B.A.Sc., Toronto, Ont.
Dept. Soldiers' Civil Re-establishment.
6. C. W. HANCOCK, B.A.Sc., Box 95, Hamilton, Ont.
7. B. HYMAN, B.A.Sc., 182 Baldwin Street, Toronto, Ont.
7. E. F. JOHNSTON, B.A.Sc., Sherbrooke, Que.
Canadian Ingersoll Rand Co.
1.*N. G. MCDONALD, B.A.Sc., Sunderland, Ont.
7.*E. W. MCLEOD, B.A.Sc., Embro, Ont.
2. C. E. MACDONALD, B.A.Sc., Toronto, Ont.
International Nickel Co. of Canada.
1. C. O. MADDOCK, B.A.Sc., Toronto, Ont.
With James, Loudon & Hertzberg, Ltd.
1. A. R. MENDIZABAL, B.A.Sc., Guelph, Ont.
Dept. Soldiers' Civil Re-establishment.
1. R. C. MITCHELL, B.A.Sc.,
On Overseas Service.
7.*W. H. ORR, B.A.Sc.,
On Overseas Service.

*Degree with honours.

1918—*Continued.*

1. G. P. PEARSON, B.A.Sc., Schomberg, Ont.
1.*J. ROVSKY, B.A.Sc., 121 Maria Street, Toronto
1. W. L. SAGAR, B.A.Sc.,
On Overseas Service.
1.*M. SAMUEL, B.A.Sc., 7 Bellevue Place, Toronto, Ont.
1.*C. R. SCOTT, B.A.Sc., Toronto, Ont.
With James, Loudon & Hertzberg, Ltd.
2. J. G. SHEPLEY, B.A.Sc., (Died while on active service, England, 1918).
7.*W. G. WOONTON, B.A.Sc.,
On Overseas Service.

*Degree with honours.

CERTIFICATES.

MINERALOGY AND ASSAYING.

1896. G. JOHNSTON.
1897. E. B. WEBSTER.
1901. G. A. HUNT.

ELECTRICITY.

1896. A. T. TYE, c/o Empresa Hanseatica, Barranquilla, Columbia, South America.
1898. A. N. MCMILLAN, Penetanguishene, Ont.
1900. A. H. SMITH.
1896. E. I. SIFTON, London, Ont.
Manager, London Electric Construction Co.
1903. W. ELWELL (deceased).

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A

Abendana, E. M. (deceased)..1914
Acres, H. G.....1903
Adams, J. H.....1910
Adams, O. F.....1910
Adlard, L. S.....1915
Adsett, F. C.....1914
Agnew, N. J.....1910
Aitken, J.....1911
Akers, H. G. (deceased).....1908
Alexander, J. H.....1904
Alison, T. H.....1892
Alison, J. G. R.....1903
Allan, E. B.....1916
Allan, J. R.....1892
Allan, J. L.....1900
Allan, L. F.....1908
Allan, L. B.....1911
Allen, F. G.....1907
Allen, R. J.....1913
Allison, C. B.....1908
Alport, F.....1906
Alton, J. L.....1914
Amos, W. L.....1906
Amsden, W. G. (deceased)....1910
Anderson, A. C.....1915
Anderson, A. G.....1892
Anderson, C.C.....1918
Anderson, F. J. (deceased)....1907
Anderson, R. M.....1908
Anderson, A. S. (deceased)....1913
Andrews, E.....1897
Andrews, F. C. (deceased)....1914
Angus, H. H.....1903
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Apsey, J. F.....1888
Archer, E. G.....1911
Ardagh, A. G.....1893
Ardagh, E. G. R.....1900
Arens, A. H.....1906
Arens, H. W. (deceased).....1905
Arens, R. J.....1908
Arens, E. G.....1909
Arksey, G. A.....1915
Armer, C. E.....1914
Armer, J. C.....1906
Armour, R. H.....1905
Armstrong, J.....1895
Armstrong, H. V.....1906
Arthur, R. M.....1915
Ashbridge, W. T.....1888
Augustine, A. P.....1907
Austin, E. T.....1909
Austin, F. D.....1915
Avery, C. R.....1913
Aylesworth, C. B.....1905

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Babcock, H. A.....1917
Badgley, L. A.....1911
Bain, J. A. (deceased).....1900
Bain, J. W.....1896
Baird, J. A.....1910
Baird, W. J.....1910
Baker, M. H.....1906
Baldwin, F. W.....1906
Baldwin, L. C. M.....1913
Ball, E. F.....1888
Ball, F. W.....1916
Ball, W. V.....1915
Ballantyne, H. F.....1893
Ballinger, J. G.....1918
Banbury, T. R.....1915
Banigan, J.....1917
Banks, H. R.....1914
Banting, E. W.....1906
Barber, F.....1906
Barber, H. C.....1908
Barber, H. G.....1902
Barber, T.....1899
Barber, W.....1905
Barker, H. F.....1894
Barley, J. H.....1900
Barnes, L. F.....1916
Barnett, H. A.....1910
Barrett, R. H. (deceased).....1901
Barrett, J. H.....1904
Barry, W. H.....1909
Bartlett, E.....1908
Bartley, T. H.....1911
Bates, M. (deceased).....1906
Batten, H. L.....1911
Beacock, V. A.....1915
Beatty, F. W.....1913
Beatty, W. B.....1913
Beatty, H. J.....1891

Beatty, W. G.....1901
Beatty, J. A.....1903
Beauregard, A. T.....1894
Beckstedt, R.D.S.....1909
Bedard, E. L.....1914
Bedard, H. J.....1914
Bedford, F. J. (deceased).....1908
Begg, W. A.....1905
Beith, R. E.....1909
Belcher, J. T.....1914
Bell, C. A.....1913
Bell, G. G.....1905–1908
Bell, R. S.....1913
Bellisle, J. P. (deceased).....1906
Bemrose, B. W.....1916
Bennett, G. A.....1909
Bennett, P.....1915
Bennett, S. G.....1914
Bergey, A. E 1894
Berkeley, G. L.....1911
Berry, A. E.....1917
Berry, E. W.....1910
Bertram, G. M.....1910
Betts, H. H.....1906
Beynon, D. E.....1906
Billings, J. H.....1911
Bingham, H. C.....1910
Binns, P. V. (deceased) 1914
Binns, R. E.....1913
Birchard, E. R.....1909
Birrell, W. G.....1916
Bissett, D. G.....1910
Bissett, G. W.....1906
Bissett, J. R 1911
Black, B. S.....1913
Black, G. E.....1908
Black, H. M.....1915
Black, W. D.....1909
Blackwell, R. H. H.....1910
Blackwood, A. E.....1895
Blackwood, W. C.....1906
Blain, D.....1913
Blair, W. J.....1902
Bleakley, J. F.....1885
Blizard, D. C.....1909
Blyth, J. M.....1914
Boeckh, J. C.....1906
Bonham, A. R.....1914
Bonnell, M. B.....1904
Bonter, E. R.....1913
Bonus, W. H.....1915
Boswell, E. J.....1895
Boswell, M. C.....1900
Boswell, W. O. (deceased).....1911
Bothwell, R. S. C.....1917
Boulton, W. J.....1909
Bourne, O. B.....1907
Boustead, W. E. (deceased).....1890
Bow, J. A.....1897
Bowen, G. H.....1909
Bower, J. H. W.....1914
Bowers, W. J. (deceased).....1901
Bowes, H. F.....1908
Bowman, A. M.....1886
Bowman, E. P.....1910
Bowman, F.....1911
Bowman, F. M.....1890
Bowman, H. D.....1907
Bowman, H. J.....1885
Boyd, D.....1916
Boyd, D. G.....1894
Boyd, W. H.....1898
Brace, J. H.....1908
Brackinreid, T. W.....1911
Brady, W. S.....1907
Brandon, E. T. J.....1901
Brandon, H. E.....1906
Bray, L. T.....1900
Brebner, G. (deceased).....1895
Brecken, P. R.....1908
Breithaupt, J. E.....1915
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Breslove, J.....1903
Breuls, H. E.....1916
Brian, M. E.....1906
Bristol, W. M.....1905
Broadfoot, F. C.....1906
Brock, A. F.....1910
Brock, W. M.....1911
Brodie, W. M.....1895
Broughton, G. H.....1907
Broughton, J. T.....1902
Brouse, E. D. G.....1915
Brouse, W. H. D.....1911
Brown, B.....1913
Brown, C. E.....1909
Brown, D. B.....1888
Brown, E. I.....1908
Brown, G. L.....1893
Brown, H. O.....1911
Brown, H. H.....1914
Brown, H. S.....1917
Brown, J. A.....1907
Brown, J. M.....1902
Brown, L. L.....1895
Brown, L. R.....1915
Brown, N. B.....1916
Brown, T. D.....1904
Brown, T. W.....1906
Brown, W. D.....1914
Browne, E. W.....1909
Browne, M. O.....1910
Bruce, W. J.....1907
Bryce, W. F. M.....1908
Buchan, P. H.....1908

Buchanan, F. M.....1915
Buchanan, J. A.....1909
Buchanan, T. R.....1913
Buchanan, W. B.....1913
Bucke, M. A. (deceased).....1890
Bucke, W. A.....1894
Budd, H. C.....1915
Bumstead, S. W.....1917
Bunnell, A. E. K.....1906
Burd, J. H.....1903
Burden, H. J.....1915
Burgess, E. L.....1903
Burgess, J. R.....1910
Burley, R. J.....1904
Burns, D. (deceased).....1883
Burns, J. C. (deceased).....1887
Burns, J. E.....1909
Burnham, F. W.....1904
Burnham, N. G. H. (deceased) 1910
Burnside, J. T. M. (deceased).1899
Burrows, B. H. A. (deceased).1913
Burwash, L. T.....1896
Burwash, N. A.....1903
Bush, C. E.....1907
Byam, F. M.....1906

C

Cain, E. T.....1911
Calder, J. W.....1904
Caldwell, W. B.....1913
Cale, W. C.....1910
Cameron, N. C.....1904
Cameron, A.....1906
Cameron, M. G.....1909
Cameron, C. S.....1911
Cameron, O. L. (deceased) ...1913
Campbell, A. D.....1910
Campbell, A. J.....1904
Campbell, A. M.....1904
Campbell, D. H.....1914
Campbell, H. M.....1914
Campbell, J. J. (deceased)....1914
Campbell, W. G.....1902
Campbell, A. R. (deceased)...1902
Campbell, R. J.....1895
Campbell, G. M.....1896
Campbell, L. L.....1913
Campbell, W. C.....1905
Campbell, N. A.....1908
Campbell, R. A.....1909
Campbell, A. W.....1906
Campbell, J. E.....1908
Campbell, C. D.....1911
Candee, C. N.....1914
Canniff, C. M.....1888
Carey, B.....1889
Carlyle, R. T.....1914
Carlyle, W. M. (deceased)....1910
Carmichael, C. G. (deceased)..1902
Carmichael, F. N. D.....1915
Carmichael, R. M.....1913
Carpenter, H. S.....1897
Carrie, G. M.....1913
Carroll, A. M.....1908
Carroll, M. J.....1906
Carscallen, H. R.....1908
Carson, W. R.....1905
Carter, J. M.....1914
Carter, W. E. H.....1898
Caster, J. H.....1907
Catto, R. W.....1915
Caudwell, N. S.....1910
Cavell, E.....1907
Chace, W. G.....1901
Chadwick, R. E. C.....1906
Chadwick, W. W.....1911
Challen, G.....1908
Challies, J. B.....1904
Chalmers, W. J.....1889
Chalmers, J.....1894
Chambers, E. V.....1914
Chandler, R. B.....1911
Chapman, J. R. (deceased)...1916
Charlesworth, L. C.....1893
Charlton, H. W.....1897
Chase, A. V.....1905
Cherry, P. G.....1911
Chesnut, A. W. (deceased)....1910
Chesnut, E. F.....1911
Chesnut, F. H.....1908
Chesnut, V. S.....1909
Chewett, H. J.....1888
Chilver, C. A.....1904
Chilver, H. L.....1904
Chisholm, D. C.....1910
Christie, F. C.....1917
Christie, W.....1902
Christie, U. W.....1904
Christie, A. G.....1901
Christie, R. M.....1914
Chubbuck, L. B.....1899
Clark, H.....1913
Clark, J.....1900
Clark, G. T.....1906
Clark, F. W.....1911
Clark, H. J.....1911
Clarke, F. F.....1903
Clarkson, G. E.....1913
Claveau, J. A.....1910
Cleary, F. S. (deceased).....1911
Clegg, B. D.....1913
Clement, W. A.....1889
Clement, S. R. A.....1905

Cline, C. G.....1909
Clipsham, K. M.....1914
Clothier, G. A.....1899
Coates, P. C.....1904
Cockburn, J. R.....1901
Cockburn, L. S.....1910
Cockburn, R. M.....1915
Code, A. G.....1910
Code, S. B.....1904
Code, T. F. (deceased).....1904
Cole, D. B.....1911
Cole, W. E. (deceased).....1908
Cole, C. R.....1910
Coleman, J. H.....1913
Colhoun, G. A.....1906
Colleran, J. C.....1917
Collett, W. C.....1908
Collinson, J. G.....1909
Colquhoun, G. A.....1910
Coltham, G. W.....1909
Conlon, F. T. (deceased).....1902
Connell, C. B. B.....1907
Connor, H. V.....1902
Connor, A. W.....1895
Cooch, H. A.....1909
Cook, A. S.....1911
Cook, G. M.....1913
Cook, J. D. (deceased).....1915
Cook, W. A. Mc.....1906
Coombs, J. A.....1913
Coon, B. R.....1913
Cooper, C.....1899
Corbould, C. E. B.....1914
Corman, E. H.....1917
Corman, W. E.....1909
Cornell, C. W.....1911
Corrigan, G. D. (deceased).....1890
Corrigan, T. E.....1905
Cory, R. Y.....1908
Coulson, C. L.....1903
Courtice, E. D. W.....1914
Cousins, E. L.....1906
Coulthard, R. W.....1899
Cowan, W. A.....1904
Cowper, G. C.....1907
Coyne, H.....1908
Craig, J. A.....1899
Craig, J. H.....1910
Craig, S. E.....1904
Crashley, J. W.....1914
Crawford, A. W.....1914
Crealock, A. B.....1915
Creighton, A. G.....1906
Crerar, S. R.....1904
Crosby, N. L. R.....1905
Crosby, T. H.....1909
Crouch, M. E.....1911
Cruthers, W. M.....1911
Culbert, M. T. (deceased).....1902
Culbert, J. V.....1907
Cumming, J. D.....1908
Cumming, R.....1916
Cumming, K.....1902
Cummins, O. F.....1911
Cunerty, T. J.....1911
Cunningham, C. H.....1911
Cunningham, J. N. (deceased)1916
Cunningham, R. H.....1909
Currie, W. M.....1904
Curtis, W. T.....1913
Curzon, J. H.....1911
Cuthbertson, W.....1914

D

Da Costa, W. R.....1915
Dahl, A. D.....1908
Dale, R. S.....1916
Dallyn, F. A.....1909
D'Alton, F. K.....1911
Dalton, G. F.....1914
Dandeno, L. G.....1916
Daniel, N. H.....1915
Daniels, W. N.....1906
Danks, F. A.....1908
Danks, C. N.....1909
Dann, E. M. (deceased).....1909
Darling, E. H.....1898
Darroch, J.....1908
Dashwood, R.....1914
Dates, A. J.....1913
Davey, C. G.....1915
Davidson, R. D.....1914
Davidson, G. P. (deceased)...1915
Davidson, J. J.....1915
Davis, R.....1907
Davis, A. I.....1909
Davis, H. W.....1909
Davis, H. C.....1909
Davis, W. B.....1911
Davison, J. E.....1900
Davison, A. E.....1903
Dawson, I. H. (deceased).....1909
Deacon, T. R.....1891
Dean, C. D.....1910
Dean, W. A.....1915
Death, N. P. F.....1909
DeCew, J. A.....1896
De Guerre, F. C. (deceased)..1911
Deitch, E. L.....1913
Delahaye, W. H.....1909
Delamere, R. D.....1914
De Laporte, A. V.....1910

Delisle, J. L. 1916
Depew, H. H. 1904
Derham, W. P. 1909
Deverall, E. V. 1915
Diamond, R. W. 1913
Dibblee, J. 1915
Dickinson, E. D. 1900
Dickson, G. W. 1900
Dickson, J. V. 1917
Dickson, W. L. 1915
Dill, C. W. 1891
Dixon, H. A. 1900
Dobbin, R. L. 1910
Dobbin, W. L. 1916
Dobie, J. S. 1895
Dobson, W. P. 1910
Dodds, W. A. 1909
Doncaster, L. W. 1911
Doorly, H. C. (deceased) 1908
Douglas, F. W. 1914
Douglas, R. H. 1908, 1909
Douglas, W. E. 1902
Downey, G. A. 1915
Downing, F. H. 1911
Duff, A. R. 1909
Duff, C. K. 1918
Duff, J. A. (deceased) 1890
Duff, W. A. 1901
Duggan, G. H. 1883
Dunbar, W. B. 1911
Duncan, J. M. 1910
Duncan, W. G. 1913
Dundass, C. S. 1906
Dunlop, R. J. 1902
Dunn, T. H. 1893
Dyer, F. C. 1908

E

Eagleson, F. M. 1908
Eason, D. E. 1901
Eastwood, J. H. 1916
Eckert, C. H. 1911
Edwards, W. M. 1902
Edwards, C. 1908
Edwards, G. R. 1915
Edwards, H. C. 1914
Elder, A. J. 1904
Elliot, J. A. 1911
Elliot, R. V. 1915
Elliott, J. A. 1914
Elliott, G. R. 1911
Elliott, C. F. 1911
Elliott, H. F. 1914
Elliott, H. P. 1896
Elliott, J. C. 1899
Ellis, F. D. 1918
Ellis, S. D. (deceased) 1914
Elwell, W. (deceased) 1902
Emery, V. H. 1910
Emmerson, E. R. 1915
Empey, J. M. 1902
English, A. B. (deceased) 1890
Evans, A. C. 1915
Evans, S. D. 1907
Evans, S. L. 1908
Evans, W. J. 1910
Ewart, J. A. 1894
Ewart, F. R. 1907
Ewing, E. O. 1908
Eyres, H. E. 1914

F

Fairbairn, J. M. R. 1893
Fairchild, C. 1892
Fairclough, H. W. J. 1918
Fairlie, H. W. 1910
Falconer, F. S. 1909
Falconer, H. S. (deceased) 1915
Falls, O. M. 1914
Fargey, T. A. 1909
Farrell, K. A. 1911
Farrelly, T. J. 1911
Fear, S. L. 1906
Fensom, C. J. 1903
Ferguson, C. R. 1910
Ferguson, D. G. 1914
Ferguson, G. H. 1905
Ferguson, J. B. 1909
Ferguson, J. W. 1910
Fergusson, A. T. 1909
Fierheller, H. S. (deceased) 1905
Fingland, W. 1893
Fiddes, F. R. 1913
Fisken, J. B. K. 1910
Flanagan, O. L. 1908
Flannery, D. T. 1915
Fleck, J. G. 1904
Flegg, R. L. 1916
Fleming, D. H. 1913
Fleming, G. O. 1914
Fleming, G. R. S. (deceased) 1907
Fleming, J. S. (deceased) 1914
Fletcher, A. W. 1910
Fletcher, F. T. 1910
Fletcher, J. A. 1910
Flint, C. 1908
Flint, T. R. C. 1910
Flook, S. E. 1911
Flynn, C. C. 1911
Follett, R. C. 1910
Foote, F. F. 1913
Forbes, D. L. H. 1902
Ford, A. L. 1904
Ford, J. W. H. 1915

Foreman, J. L.....1914
Foreman, J. M.....1910
Forman, W. E.....1899
Forrester, C.....1893
Forward, E. A.....1897
Forward, C. C.....1906
Foster, A. H.....1908
Foster, W. J.....1910
Foulds, W. C.....1910
Francis, Walter J.....1893
Francis, G. C.....1908
Frankel, E. L.....1911
Franklin, H. J.....1914
Fraser, A. (deceased).....1910
Fraser, J. A.....1917
Fraser, R. A.....1918
Fraser, W. R.....1915
Fredin, J.....1910
Freeland, E. E.....1911
Freeman, T. E.....1909
Freeman, J. R.....1911
French, W. G.....1915
Frid, H. P.....1911–1915
Frost, E. R.....1909
Frost, J. G. G.....1914
Fuce, E. O.....1903
Fuller, C. H. R.....1914
Fuller, R. J.....1911
Fullerton, C. H.....1900
Fulton, W. J.....1915
Fux, P. C.....1907

G

Gaby, F. A.....1903
Gagne, S. (deceased).....1901
Galbraith, J. S.....1913
Galbraith, R. D.....1915
Gall, H.....1910
Galletly, J. S.....1907
Galt, G. (deceased).....1907
Gardner, D. B.....1916
Gardner, J. C.....1903
Garland, M. L.....1890
Garrow, A. B.....1907
Geale, C. N.....1915
Gear, S. S.....1908
George, R. E.....1903
Gibbons, J.....1888
Gibson, A. E.....1902
Gibson, J. M.....1910
Gibson, M. M.....1910
Gibson, N. R.....1901
Gibson, W. S.....1904
Gill, E. I.....1914
Gill, J. R.....1914
Gillespie, P.....1903
Gillies, A.....1907
Glass, L. G.....1915
Glover, A. E.....1909
Goad, V. A. E.....1910
Goldie, A. R.....1893
Goodall, J. N.....1904
Gooderham, A. E.....1909
Gooderham, G. A.....1915
Gooderham, J. L.....1911
Goodeve, V. S.....1910
Goodman, H. M.....1913
Goodwin, A. C.....1902
Goodwin, J. B.....1892
Gordon, J. P.....1904
Gordon, W. A.....1910
Gouinlock, R. W.....1914
Gould, W. H. R. (deceased).....1915
Gourlay, V. F.....1910
Gourlay, W. A.....1903
Graham, C. W.....1906
Graham, E. B.....1910
Graham, G. W.....1907
Graham, D. A.....1909
Graham, T. S.....1915
Gram, J. I.....1917
Grange, E. R.....1915
Grant, W. F. (deceased).....1898
Grant, R. R.....1909
Grasett, C. S.....1907
Grassie, C. A.....1908
Gray, A.....1904
Gray, A. G.....1913
Gray, A. T.....1897
Gray, A. J.....1913
Gray, E. D.....1915
Gray, E. R.....1913
Gray, G. D.....1915
Gray, J.....1906
Gray, J.....1915
Gray, J. E.....1909
Gray, W. W.....1904
Greatrex, W. K.....1917
Green, R. E.....1911
Greene, E. A.....1911
Greene, G. E. D.....1909
Greene, P. W.....1906
Greene, R. L.....1910
Greene, W. H.....1909
Greenwood, W. K.....1904
Grierson, C. I.....1914
Griffiths, G. E.....1915
Guernsey, F. W.....1895
Gulley, C. L.....1908
Gunn, W. W.....1909
Gurnett, E. G.....1916
Gurney, W. C.....1896
Gurofsky, M.....1916
Guest, W. S.....1900
Guy, E.....1899

H

Haas, M. S. 1915
Hackner, J. W. 1908
Hadcock, J. P. 1913
Hagarty, R. E. W. 1907
Hagedorn, G. C. 1916
Hagerman, F. G. 1909
Haight, H. V. 1896
Halford, D. S. 1915
Hall, H. G. 1911
Hall, K. 1907
Hall, W. H. 1914
Hall, W. T. (deceased) 1915
Hally, G. H. 1914
Hamer, A. T. E. 1901
Hamilton, J. F. 1903
Hamilton, C. B. 1906
Hamilton, C. T. 1907
Hamilton, G. M. 1911
Hancock, C. W. 1918
Hanes, G. S. 1903
Hanley, S. C. 1893
Hanlon, J. E. 1915
Hanmer, G. 1917
Hanna, J. J. 1914
Hanning, G. F. 1889
Hara, L. D. 1904
Harcourt, F. Y. 1903
Harcourt, H. E. 1911
Hare, R. A. 1907
Hare, R. M. 1916
Hare, W. A. 1899
Harkness, A. H. 1895
Harkness, A. L. 1906
Harper, C. J. 1909
Harris, A. B. 1917
Harris, C. J. 1904
Harris, J. H. 1910
Harris, H. C. 1913
Harris, R. W. 1917
Harrison, R. L. 1906
Harrison, F. W. 1905
Harrison, E. 1906
Harron, L. W. 1916
Hartney, J. C. (deceased) 1906
Harvey, C. 1901
Harvey, D. W. 1909
Harvie, N. J. (deceased) 1910
Hastings, C. E. 1916
Hastings, M. B. 1911
Haultain, H. E. T. 1889
Haviland, F. L. 1908
Hawes, J. H. 1914
Hawley, H. A. 1913
Hay, C. O. (deceased) 1909
Hayes, L. J. 1903
Hayman, L. T. 1914
Hayward, C. 1915
Hearn, R. L. 1913
Heebner, M. B. 1911
Heinonen, H. J. 1913
Helliwell, J. G. (deceased) 1910
Helson, F. I. 1901
Hemphill, W. 1900
Hemphill, J. 1909
Henderson, E. E. 1885
Henderson, F. D. 1903
Henderson, J. F. 1910
Henderson, S. E. M. 1900
Henderson, C. D. 1908
Hendry, M. C. 1905
Henry, J. A. 1900
Henry, R. A. 1913
Henwood, C. 1902
Herald, W. J. 1894
Hermon, E. B. 1886
Heron, J. B. 1904
Hertzberg, C. S. L. 1905
Hertzberg, H. F. H. 1907
Hett, S. 1906
Hewson, E. G. 1908
Hewson, W. G. 1905
Hickling, F. G. 1910
Hicks, W. A. B. 1897
Higgins, L. T. 1915
Hill, E. M. M. 1904
Hill, S. N. 1904
Hill, H. O. 1907
Hill, H. R. 1911
Hill, T. A. 1913
Hillis, C. R. (deceased) 1906
Hinch, E. F. 1910
Hogarth, B. B. 1914
Hogarth, C. E. 1915
Hogarth, G. 1909
Hogg, T. H. 1907
Hoidge, R. T. C. 1916
Holcroft, H. S. (deceased) 1900
Holden, A. J. 1917
Holden, O. 1913
Holmes, A. E. 1909
Holmes, C. R. 1909
Hookway, C. W. 1906
Hoover, O. H. 1910
Hopkins, P. E. 1910
Hopkins, R. H. 1906
Horton, J. A. 1903
Hoshal, G. C. 1909
Houston, R. S. 1906
Howard, J. T. (deceased) 1913
Howlett, T. F. 1913
Hubbert, S. 1916
Huber, W. 1906

Huether, D. J.....1908
Huether, A. D.....1908
Huff, A. J.....1911
Huffman, K.....1911
Hughes, C. (deceased).....1909
Hugli, E. E. H.....1914
Hull, H. S.....1895
Hull, A. H.....1906
Hunter, A. E. (deceased).....1909
Hunter, A. N.....1908
Hurlburt, R. W.....1917
Hustwitt, S. A.....1914
Hutcheon, J.....1890
Hutcheson, G. F.....1917
Hutchings, W.....1914
Hutton, C. H.....1907
Hyatt, H.....1911
Hyland, H. M.....1907
Hyman, B.....1918
Hyman, E. W.....1907

I

Iler, S. B.....1908
Ingles, C. J.....1904
Innes, W. L.....1890
Ireland, L. G.....1907
Ireland, T. P.....1915
Ireson, E. T.....1913
Ironside, G. A.....1915
Irvine, J. (deceased).....1889
Irwin, H.....1909
Irwin, W. J.....1910
Isbister, J.....1909

J

Jackes, F. P.....1909
Jackson, C. W. H.....1915
Jackson, J. G.....1903
Jackson, F. C.....1901
Jackson, W.....1907
Jackson, C. B.....1907
Jackson, J. E.....1909
Jackson, K. B.....1916
James, E. W.....1909
James, D. D.....1889
James, E. A.....1904
James, F. L.....1910
James, O. S.....1891
Jamieson, E. A.....1910
Jannati, A. S.....1914
Jarvis, R. H. (deceased).....1911
Jefferson, K. A.....1915
Jeffrey, D.....1882
Jepson, W. C.....1906
Jermyn, P. V.....1904
Job, H. E.....1894
Johnson, C. C.....1890
Johnson, R. P.....1914
Johnson, S. M.....1894
Johnson, G. R.....1913
Johnston, E. F.....1918
Johnston, G. W. F.....1915
Johnston, H.....1903
Johnston, H. C.....1910
Johnston, A. C.....1894
Johnston, D. M.....1902
Johnston, H. A.....1900
Johnston, J. C.....1900
Johnston, J. A.....1900
Johnston, C. K.....1903
Johnston, R. H.....1910
Johnston, W. J.....1909
Johnston, C.....1906
Johnston, C. E. (deceased).....1909
Johnston, J. T.....1908
Jones, C. M.....1915
Jones, J. E.....1894
Jones, L. E.....1911
Jones, G. S.....1905
Jones, G. R.....1906
Jones, R. D.....1915
Jones, T. (deceased).....1906
Jupp, A. E.....1906
Jupp, E. H.....1915
Junkin, R. L.....1913

K

Kamman, J. I.....1914
Karn, H. C.....1916
Kay, J. (deceased).....1914
Kay, E. W.....1907
Keefe, W. S. H.....1904
Keefer, N. G.....1914
Keele, J.....1893
Keffer, A. H. E.....1909
Keith, J. C.....1910
Keith, D. F.....1907
Keith, H. P.....1907
Kelly, E. A.....1911
Kelly, S. S.....1913
Kemp, J. B. O.....1909
Kennedy, J. H.....1882
Kennedy, H. G.....1908
Keppy, J. D. (deceased).....1906
Kerby, H. S.....1914
Kerr, A. E.....1913
Kerr, J. A.....1914

Kewin, G. E.....1914
Key, W. R.....1909
Keys, C. R.....1915
Keys, W. R.....1908
Killip, W. C.....1908
Kilmer, C. E.....1913
King, C. F.....1897
King, G. F.....1916
King, J. T.....1910
Kinghorn, A. A.....1907
Kingstone, G. A.....1910
Kirby, J. R. (deceased).....1916
Kirby, R. W.....1916
Kirkland, W. C. (deceased)..1884
Kirkwood, M.....1911
Kirn, R. W.....1916
Kirwan, G. L.....1910
Kirwan, P. T.....1910
Klingner, L. W.....1907
Klotz, H. N. (deceased).....1909
Knight, R. H.....1902
Knight, J. A.....1914
Knight, S.....1910
Kohl, H.....1915
Kormann, J. S.....1898
Kribs, G.....1905
Krug, S. J.....1916

L

Laidlaw, J. T.....1893
Laidlaw, R. A.....1901
Laidlaw, R. E.....1915
Laing, W. F. (deceased).....1896
Laing, A. T.....1892
Laing, J. S.....1913
Laing, P. A.....1905
Laird, R.....1886
Lamb, F. C.....1907
Lamb, G. J.....1915
Lamont, A. W.....1909
Lancaster, H. M.....1906
Lane, A. (deceased).....1891
Lang, A. G.....1903
Lang, J. L.....1906
Lang, S. A. (deceased).....1914
Langley, C. E.....1892
Langmuir, F. L.....1902
Langmuir, C. B.....1909
Lanning, J.....1911
Larkworthy, W. J. (deceased).1904
Laschinger, E. J.....1892
Lash, F. L.....1893
Lash, N. M.....1894
Latham, R.....1899
Latimer, C. W.....1914
Latornell, A. J. (deceased)....1903
Latornell, A.....1905
Lavrock, J. E.....1898
Lawler, E. R.....1910
Lawless, N. (deceased).....1911
Lawrence, G. W.....1915
Lawson, W. L.....1892
Lawrie, R. R. (deceased) 1896
Leach, H. O. (deceased).....1915
Leaver, C. B.....1910
Lee, L. A. C.....1916
Lee, R. G.....1910
Lee, W. A. (deceased).....1892
Leighton, J. W.....1905
Leitch, J. N. (deceased).....1910
Lennox, A. E.....1909
LePan, A. D.....1907
Leslie, A.....1913
Leslie, J. N. M.....1908
Lethbridge, W. R.....1911
Levesque, L. (deceased).....1917
Lewis, F. C.....1908
Lieberman, M.....1911
Lillie, G. L.....1911
Lindsay, J. H.....1907
Lindsay, R. E.....1914
Linton, A. P.....1906
Livingston, H. D. (deceased)..1913
Lloyd, N. C. A.....1909
Lloyd, R. H.....1915
Lockhart, W. E. (deceased)...1915
Long, A. L.....1911
Longstaff, J. C.....1910
Longworthy, W. E.....1915
Lorimer, N. H.....1914
Lott, A. E.....1887
Loucks, R. W. E.....1909
Loudon, T. R.....1905
Lount, C. T.....1915
Lowrie, A. W. P.....1911
Ludgate, B. A.....1885
Lumbers, W. C.....1901
Lye, O. G.....1914
Lye, R. G.....1915
Lynar, H. R.....1908

Mac

Macallum, A. F.....1893
MacAndrews, W. M.....1911
Macaulay, R. V.....1911
MacBain, J. T.....1911
MacBeth, C. (deceased).....1896
MacBeth, R. E. A. (deceased)..1911
Macdonald, A. D.....1910
Macdonald, C. A.....1915

Macdonald, C. E.....1918
Macdonald, G. G.....1917
Macdonald, J. B.....1910
Macdonald, J. A.....1910
Macdonald, G. A.....1910
Macdonald, F. M.....1911
Macdonald, R. A.....1916
Macdonald, W. A. (deceased)..1914
Macdonell, I. M.....1915
Macdougall, A. C.....1901
Macfarlane, E. D.....1909
MacGregor, A. E.....1910
MacKay, A. G.....1907
MacKay, J. T.....1902
MacKay, E. G.....1910
MacKendrick, B.....1914
MacKenzie, H. R.....1913
MacKenzie, K. A.....1906
MacKenzie, H. J.....1914
Mackenzie, A. M.....1914
Mackenzie, W. D.....1907
MacKenzie, W. S.....1911
Mackinnon, J. A.....1911
Mackinnon, J. G.....1909
Mackinnon, W.....1906
Mackintosh, D.....1898
Maclachlan, K. S.....1913
Maclachlan, W.....1906
MacLachlan, W. A.....1909
MacLaurin, J. G.....1911
Maclean, B. A.....1909
MacLennan, G. G. (deceased).1910
MacLeod, G.....1907
MacLeod, D. D. (deceased)...1910
MacMillan, G.....1901
MacMurchy, J. A.....1896
MacMurchy, H. G.....1910
Macpherson, H. E.....1915
Macpherson, N. W.....1909
MacPherson, A. R.....1913
Macpherson, H. N.....1914
MacQuarrie, A. H.....1914
MacTavish, H. J.....1910
MacTavish, W. H.....1913

Mc

McAllister, J. E.....1891
McAllister, A. L.....1893
McAlpine, D. D.....1909
McAndrew, J. B.....1911
McAree, J. (deceased).....1882
McArthur, R. E.....1900
McArthur, A. S.....1909
McAuslan, H. J.....1903
McBride, A. H.....1902
McBride, T. C.....1910
McCaffrey, W. R.....1915
McCandlish, S. G.....1917
McCarthy, T. V.....1913
McClelland, H. L.....1917
McCollum, C. R.....1909
McConnell, A. W.....1906
McConnell, R. S.....1913
McCordick, A. S.....1909
McCort, C. R.....1915
McCrodan, B. A.....1916
McCuaig, O. B.....1904
McCuaig, P. J.....1909
McCulloch, A. L.....1887
McCurdy, J. A. D.....1907
McDonald, K. D.....1915
McDonald, J. P.....1915
McDonald, N. G.....1918
McDonald, R. C.....1914
McDougall, J. (deceased).....1884
McDougall, S. G.....1910
McDowall, R.....1888
McEachren, J. A.....1911
McElhanney, T. A.....1910
McElroy, R. W.....1911
McEntee, B.....1892
McEwen, G. G.....1904
McEwen, H. J.....1911
McFarlane, J. A.....1903
McFarlane, W. G.....1904
McFarlane, J. B.....1907
McFarlen, G. W.....1888
McFarlen, T. J.....1893
McFaul, W. L.....1913
McGarry, P. J.....1910
McGeorge, W. G.....1908
McGhie, W. G.....1911
McGibbon, C. P.....1904
McGie, W. R.....1915
McGill, S. B.....1914
McGorman, S. E.....1906
McGowan, J.....1895
McGregor, W. W. (deceased)..1905
McGregor, J. M.....1908
McGugan, D. F.....1915
McGugan, D. J.....1907
McIlhargey, P. E.....1917
McIlwraith, D. G.....1906
McIntosh, A. H.....1907
McIntosh, W. G.....1909
McIntyre, J. S.....1915
McKague, E. V.....1915
McKay, O.....1885
McKay, C. (deceased).....1904
McKay, W. N.....1895
McKechnie, F. H.....1909
McKenzie, D. A.....1911
McKenzie, D. W.....1905
McKenzie, J. A.....1906

McKim, L. R. 1910
McKinnon, H. L. 1895
McKnight, J. H. 1909
McLaren, A. J. 1911
McLaren, D. L. 1914
McLean, C. A. 1905
McLean, W. N. 1905
McLean, L. A. (deceased) 1908
McLeish, A. G. 1911
McLellan, R. A. 1911
McLennan, A. L. 1902
McLeod, E. W. 1918
McLeod, G. 1909
McMaster, A. T. C. 1901
McMaster, W. A. A. 1908
McMillan, J. G. 1900
McMillan, D. 1904
McMillan, V. 1909
McMordie, H. C. 1908
McNab, J. V. 1906
McNaughton, A. L. 1903
McNaughton, F. W. 1898
McNeill, F. W. 1907
McNiven, J. 1910
McPherson, A. J. 1893
McPherson, J. A. 1906
McPherson, W. B. 1911
McQuarrie, M. K. 1907
McQueen, A. A. 1911
McRoberts, A. A. 1908
McSloy, J. I. 1910
McTaggart, A. L. 1894
McVean, H. G. 1901

M

Mace, F. G. 1905
Madden, J. F. S. 1902
Maddock, C. O. 1918
Madge, N. G. 1908
Madill, H. H. 1911
Main, W. T. 1893
Maisonville, A. W. R. 1910
Malcolm, A. L. 1909
Malcolmson, W. S. 1907
Malone, J. E. 1908
Manning, N. H. 1909
Manning, R. C. 1917
Manson, G. J. 1904
Manson, A. B. 1909
Marani, C. J. 1888
Marani, V. G. 1893
Margison, O. 1916
Marlatt, K. D. 1908
Marr, N. 1910
Marriott, F. G. 1903
Marrs, C. H. 1902
Marrs, D. W. 1906
Marshall, J. A. 1914
Marshall, J. A. P. 1914
Marshall, R. J. 1908
Marshall, S. A. 1907
Martin, E. T. 1915
Martin, F. 1887
Martin, J. C. 1911
Martin, W. H. 1910
Martin, T. 1896
Martindale, E. S. 1909
Martyn, O. W. 1909
Mason, D. H. C. 1907
Mathers, A. S. 1917
Matheson, W. C. 1901
Mathison, P. 1901
Matthews, R. G. 1914
Matthews, A. C. 1910
Maus, C. A. 1903
Maxwell, H. W. 1914
Maxwell, W. A. 1906
Maynard, H. V. 1907
Meader, C. H. 1910
Meadows, C. A. 1911
Meadows, W. W. 1895
Meahan, P. W. 1914
Mechin, F. C. 1914
Meitz, W. H. 1915
Melson, J. W. 1907
Mendizabal, A. R. 1918
Mennie, R. S. 1902
Menzies, J. M. 1906
Merrill, E. B. 1890–1891
Merriman, H. O. 1910
Middleton, H. T. 1901
Mickle, G. R. 1888
Mickleborough, K. F. 1913
Mickler, G. J. 1913
Mill, F. X. (deceased) 1889
Millar, W. G. 1914
Miller, D. J. 1910
Miller, A. S. 1914
Miller, L. Haun 1900
Miller, M. L. 1903
Miller, L. R. 1906
Milligan, G. L. 1908
Milligan, F. S. 1910
Milligan, W. E. 1914
Millman, N. C. 1913
Mills, F. L. 1915
Mills, G. G. 1907
Mills, P. E. 1910
Mills, P. H. 1914
Mills, L. G. 1911
Milne, C. G. (deceased) 1892

Mines, W.....1893
Minns, J. B.....1907
Minty, W.....1894
Mitchell, A. B.....1908
Mitchell, G.....1915
Mitchell, J. S.....1914
Mitchell, P. H.....1903
Mitchell, L. C.....1911
Mitchell, C. H.....1892
Mitchell, B. F.....1906
Mitchell, R. C.....1918
Mitchell, W. B.....1916
Moberley, H. K.....1889
Moffatt, R. W.....1905
Mogan, J. T.....1915
Molesworth, G. N.....1907
Molesworth, J. C. P. (deceased).....1908
Monds, W.....1899
Monk, E. D.....1908
Montague, J. R.....1914
Montague, F. F.....1906
Monteith, E. M.....1915
Montgomery, R. H.....1903
Moody, F. H.....1908
Moore, H. H.....1902
Moore, E. E.....1904
Moore, J. H.....1888
Moore, J. E. A.....1891
Moore, F. A.....1903
Moore, W. J.....1906
Moore, J. M.....1907
Moorhouse, W. N.....1904
Morden, L. W.....1905
Morgan, J. P.....1910
Morice, J. H.....1908
Morley, P. F.....1907
Morphy, J. A.....1911
Morris, A.....1915
Morris, B. M. (deceased).....1915
Morris, J. L.....1881
Morris, C. A.....1909
Morris, W. D.....1915
Morrison, D.....1914
Morton, G.....1909
Mowbray, F. E. H.....1908
Muir, J. M.....1915
Mullins, E. E.....1903
Mullins, G. J.....1914
Mulqueen, F. J.....1913
Munro, A. H.....1910
Munro, W. H.....1904
Munro, G. R.....1905
Munro, F. V.....1909
Muntz, E. P.....1914
Murdie, W. C.....1913
Murdock, C. R.....1906
Murphy, C. J.....1906
Murphy, M. H.....1911
Murray, E. W.....1907
Murray, J. D.....1907
Murray, W. P.....1908
Murton, J. C.....1911
Mutch, D. A. S.....1913

N

Nash, J. C.....1901
Nash, T. S.....1902
Near, W. P.....1906
Neelands, E. V.....1900
Neelands, E. W.....1907
Neelands, R. E. K.....1907
Neelands, R.....1906
Neilly, B.....1907
Neilson, M. A.....1915
Neville, E. A.....1909
Nevitt, I. H.....1903
Newcombe, J. C. (deceased).....1916
Newhall, V. A.....1910
Newman, W.....1891
Newton, J.....1909
Newton, K. L.....1913
Newton, W. E.....1910
Ney, C. H.....1916
Nichol, F. T.....1910
Nicholson, C. J.....1894
Nicholson, C. L.....1914
Nicholson, J. B.....1914
Nicklin, H. S.....1915
Nicklin, W. G.....1905
Niebel, E. H.....1911
Nixon, C. K.....1911
Noble, E. S.....1911
Noecker, C.....1914
Northey, R. K.....1911
Nott, G. E.....1916
Nourse, A. E.....1907

O

O'Brien, E. D.....1905
O'Brien, J. E.....1917
O'Callaghan, E. A.....1916
O'Connor, E. B.....1915
Odell, L. S.....1909
O'Donnell, V. J.....1909
Offerhaus, W. A. R.....1917
O'Flynn, W. A.....1911
O'Grady, W. deC.....1908
O'Hearn, J. J.....1909
Oke, W. V.....1911
Oliver, C. E.....1916

Oliver, E. W.....1903
Oliver, J. P.....1903
Omand, W. M.....1915
O'Neil, C. M.....1910
Orr, J. A.....1911
Orr, W. H.....1918
O'Sullivan, J. J.....1907
Otto, C. J.....1913
Owens, J. A.....1914

P

Pace, J. D.....1903
Pace, G.....1904
Pae, A. W.....1909
Palmer, C. E.....1910
Pardoe, W. S.....1904
Paris, J.....1904
Park, D. G.....1906
Parke, J.....1904
Parker, A. H.....1914
Parker, G. C.....1910
Parker, J. S.....1911
Parkin, J. H.....1911
Parkinson, N. F.....1913
Parr, H. A.....1917
Parsons, J. L. R.....1901
Paterson, G. W.....1906
Paton, T. K.....1907
Patten, B. B.....1903, 1905
Patterson, J.....1899
Patterson, R. G.....1914
Patton, J. McD.....1911
Paul, R. A.....1915
Paulin, F. W.....1907
Payne, A. N.....1915
Peaker, W. J.....1904
Pearce, K. K.....1910
Pearce, L. P.....1915
Pearson, C. L.....1911
Pearson, G. P.....1918
Peart, J. D.....1914
Peart, J. W.....1913
Peck, H. M. (deceased).....1915
Peckover, H. J.....1908
Pedder, J. R. (deceased).....1890
Pennington, C. W.....1914
Pepler, S. J. (deceased).....1911
Pequegnat, M.....1908
Perrin, W. J. (deceased).....1911
Perron, E.....1913
Perry, C. V. (deceased).....1914
Peterkin, S. M.....1915
Petry, A. M.....1909
Pettingill, R. E.....1906
Phillips, E. H.....1900
Phillips, H. G.....1908
Phillips, C. H.....1910
Phillips, E. P. A.....1905
Phillips, W. E.....1914
Philp, D. H.....1903
Philp, G. O.....1914
Philp, W. M.....1909
Pick, B. W.....1911
Pickering, A. E.....1904
Pigott, R. B.....1909
Pinhey, C. H.....1887
Pinkney, D. H.....1903
Pivnick, M.....1908
Playfair, N. L.....1892
Plunkett, T. H.....1903
Ponton, G. M.....1909
Pope, A. S. H.....1899
Porte, E. H.....1911
Porte, W. B.....1905
Porter, C. F.....1915
Porter, C. J.....1909
Porter, J. E.....1915
Potter, R. B.....1907
Powell, G. G.....1902
Powell, N. L.....1916
Powell, W. D.....1915
Power, G. H.....1901
Pratt, F. M.....1911
Prentice, J. M. (deceased).....1892
Price, H. W.....1901
Pringle, J. E.....1916
Prochnow, F. E.....1907
Proctor, A. I.....1909
Proctor, E. M.....1908
Procunier, J. F.....1907
Proudfoot, H. W. (deceased).....1897
Publow, C. F.....1908
Pullan, H.....1911
Pullen, E. F.....1905
Purdy, W. F. P.....1915
Purser, R. C.....1906
Pye, D. E.....1910

Q

Quail, H. C. (deceased).....1913
Quail, J.....1909
Quance, G. E.....1907
Quinlan, L. J.....1911

R

Railton, L. W.....1911
Raine, H.....1907
Raley, W. E. (deceased).....1915
Ramsay, W. S.....1910

Ramsey, G. L.....1905
Ramsperger, A. F.....1909
Rance, C. C.....1915
Raney, P. H. (deceased).....1914
Rankin, G.....1915
Rannie, J. L.....1907
Ransom, J. T.....1908
Ratz, E. G.....1913
Ratz, J. E.....1911
Ratz, R. D.....1917
Ratz, W. F. (deceased).....1902
Raymer, A. R.....1884
Raymond, D. C.....1904
Rayner, G. W.....1905
Read, F. N. (deceased).....1911
Redfern, B. J. (deceased).....1910
Redfern, W. B.....1908
Redfern, C. R.....1909
Redman, W. B.....1915
Reid, E. V. (deceased).....1911
Reid, F. B.....1904
Reid, F. G.....1915
Relyea, P. J.....1915
Revell, G. E. (deceased).....1899
Rice, R. H.....1914
Richards, E.....1899
Richardson, A. A.....1915
Richardson, C. E.....1910
Richardson, C. W. B.....1907
Richardson, F. L.....1908
Richardson, G. H.....1888
Richardson, W. A.....1911
Richmond, J.....1916
Ricker, H. A.....1908
Riddell, J. M.....1913
Riddell, M. R.....1904
Ridler, A. A.....1907
Ritchie, H. C.....1910
Ritchie, J. E.....1913
Roaf, J. R.....1900
Robertson, A. S.....1914
Robertson, A. S.....1915
Robertson, C. S.....1913
Robertson, F. A.....1908
Robertson, H. D.....1902
Robertson, J.....1884
Robertson, J. M.....1914
Robertson, J. M.....1893
Robertson, N. R.....1906
Robertson, A. R.....1908
Robertson, D. F.....1903
Robinson, J. K. (deceased)...1891
Robinson, F. J. (deceased)....1895
Robinson, A. H. A.....1897
Robinson, L. H.....1904
Robinson, W. A.....1908
Robinson, R. C.....1908
Robinson, W. E.....1911
Roblin, H. L.....1911
Roddick, J. O.....1906
Rogers, J.....1887
Rogers, C. H.....1906
Rogers, L. J.....1908
Rolfson, O.....1906
Rolph, H.....1894
Rose, H. C.....1916
Rose, J. T.....1915
Rose, K.....1888
Rose, R. R.....1908
Rosebrugh, T. R.....1888
Ross, A. C.....1915
Ross, J.....1915
Ross, J. A.....1892
Ross, J. E.....1888
Ross, D.....1908
Ross, R. A.....1890
Ross, K. G.....1906
Ross, R. B. (deceased).....1905
Ross, R. C.....1906
Ross, S. R.....1916
Ross, S. W.....1916
Ross, O. W.....1910
Rothery, L. W.....1911
Rothwell, T. E.....1905
Rothwell, H. E.....1907
Rothwell, H. D.....1914
Rounthwaite, C. H. E.....1900
Rous, C. C.....1913
Routly, H. T.....1906
Rovsky, J.....1918
Rowe, H. M.....1915
Rowe, T. L. F.....1911
Roxburgh, G. S.....1904
Rubidge, W. F. B.....1910
Runciman, A. S.....1911
Russel, W. B.....1891
Russel, R.....1893
Russell, C. H.....1913
Russell, J. P.....1916
Rust, H. P.....1901
Rutherford, F. N.....1904
Rutherford, F. S.....1914
Rutledge, L. T.....1909
Rutley, F. G.....1911
Rutter, G. W.....1915
Ryckman, J. H.....1906

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Sagar, W. L.....1918
Salter, E. M.....1911
Samuel, M.....1918
Sanders, W. K.....1906
Sanderson, A. U.....1909
Sara, R. A.....1909

Sauder, P. M. 1904
Sauer, M. V. 1901
Saunders, G. A. 1899
Saunders, H. W. 1900
Savage, E. W. 1915
Scandrett, F. R. 1911
Scarlett, A. A. 1913
Scheibe, R. R. 1896
Scheibe, H. M. 1903
Schofield, C. A. 1907
Schwenger, C. E. 1909
Scott, A. G. 1915
Scott, C. A. 1909
Scott, C. R. 1918
Scott, E. H. 1915
Scott, G. S. 1905
Scott, J. G. (deceased) 1914
Scott, Miss H. E. 1911
Scott, J. W. 1911
Scott, R. G. 1915
Scott, W. A. 1906
Scott, W. B. 1916
Scott, W. F. 1897
Seaborne, R. L. 1916
Seaton, N. D. 1911
Secord, A. O. 1908
Sedgwick, A. 1909
Segre, B. H. 1909
Seibert, F. V. 1909
Serson, H. V. 1905
Servos, F. M. 1914
Sewell, L. 1913
Seymour, H. L. 1903
Seymour, N. F. 1915
Shanks, T. 1899
Sharp, M. C. 1913
Sharpe, N. 1911
Shaw, J. H. 1898
Shaw, J. H. 1915
Shaw, K. E. 1913
Shaw, W. E. V. 1908
Shaw, M. R. 1909
Shaw, W. C. 1910
Sheard, P. 1911
Shearer, H. F. 1908
Sheehy, J. S. 1915
Sheply, J. D. 1904
Shepley, J. G. (deceased) 1918
Sheppard, A. C. T. 1907
Sheppard, H. L. 1914
Sheppard, N. E. D. 1914
Sherman, N. C. 1910
Shields, J. D. 1894
Shier, W. G. (deceased) 1915
Shipley, A. E. 1898
Shirriff, C. H. 1905
Shupe, S. 1914
Sibbett, W. A. 1911
Sievewright, R. L. 1916
Sills, C. P. 1911
Silvester, G. E. 1891
Sime, A. W. 1914
Simpson, B. N. 1914
Simpson, C. N. 1915
Sims, F. R. 1913
Sinclair, D. (deceased) 1902
Sinclair, D. G. 1913
Sinclair, C. E. 1914
Sinclair, R. B. (deceased) 1915
Sisson, C. E. 1905
Skaith, J. B. 1914
Skinner, J. L. 1916
Skinner, W. C. 1914
Slater, F. W. 1904
Smallpiece, F. C. 1898
Smart, R. S. 1904
Smelser, W. A. 1916
Smiley, R. W. 1897
Smith, A. N. 1892
Smith, A. 1894
Smith, C. A. 1916
Smith, E. E. 1917
Smith, H. G. (deceased) 1903
Smith, H. M. (deceased) 1914
Smith, R. W. (deceased) 1898
Smith, J. H. 1903
Smith, D. A. 1904
Smith, K. H. 1911
Smith, M. L. (deceased) 1911
Smith, W. C. 1910
Smith, G. E. 1910
Smith, F. L. 1910
Smith, F. R. 1907
Smither, W. J. 1904
Smithrim, E. R. 1907
Smithson, E. W. 1917
Smyth, A. H. 1915
Smyth, G. M. 1914
Snaith, W. 1907
Sneath, R. G. 1911
Snider, A. M. 1917
Somers, N. L. 1914
Soper, R. W. (deceased) 1913
Sparling, M. W. 1909
Speirs, R. M. 1917
Speller, F. N. 1893
Spellman, W. A. 1913
Spence, J. J. 1909
Spencer, A. C. 1907
Spotton, A. K. 1894
Spry, R. J. 1910
Squire, G. E. 1911
Squire, R. H. (deceased) 1893
Stamford, W. L. 1908

Standing, R. O.....1914
Stark, W. H.....1916
Starr, R. H.....1908
Stayner, D. S.....1909
Steel, W. A.....1915
Steele, I. J.....1902
Steele, A. L.....1910
Steele, W. S. (deceased).....1911
Stern, E. W.....1884
Steven, H. M.....1910
Stevenson, W. H.....1901
Stewart, A. E.....1911
Stewart, J. A.....1898
Stewart, D. L. N.....1905
Stewart, M. A.....1905
Stewart, R. B.....1909
Stewart, R. O.....1911
Stewart, W. M.....1906
Stewart, G. S.....1907
Stewart, A. W. J.....1908
Stewart, N. C.....1909
Stiles, J. A.....1907
Stitt, J. B.....1915
Stiver, J. L.....1907
St. Lawrence, J.....1908
Stock, J. J.....1908
Stock, P. H.....1909
Stocking, F. T.....1895
Stone, J. D.....1915
Stone, L. I.....1910
Stoneman, E. C. R.....1914
Storey, G. C.....1915
Story, R. A.....1911
Strathy, J. M. (deceased).....1913
Street, J. C.....1909
Strome, I. R.....1914
Stroud, J. E. C.....1915
Stroud, S.....1909
Stuart, H. B.....1908
Stuart, J. L. G.....1907–1908
Stubbs, W. F.....1905
Stull, W. W.....1897
Sturdy, N. H.....1905
Suhler, A. N.....1915
Summers, G. F.....1907
Sureda, J. A.....1916
Sutcliffe, H. W.....1907
Sutherland, A. L.....1910
Sutherland, D.....1913
Sutherland, W. H.....1902
Sutherland, C. C.....1909
Swan, A. W.....1917
Swan, W. G.....1905
Swan, R. G.....1909
Sword, A. D.....1908–1909
Sykes, F. H.....1905
Symmes, H. D.....1891
Szammers, C. F.....1911

T

Tackaberry, S. G.....1914
Tasker, R.....1913
Tate, H. W.....1909
Taylor, A.....1900
Taylor, A. N.....1915
Taylor, J. W. R.....1908
Taylor, J. S. (deceased).....1914
Taylor, R.....1911
Taylor, T.....1902
Taylor, W. E.....1908
Taylor, W. V.....1893
Teasdale, C. M.....1902
Temes, C. N.....1914
Temple, J. B.....1911
Tennant, D. C.....1899
Tennant, W. C. (deceased).....1900
Tennent, E. H.....1914
Ternan, E. A.....1910
Thom, W. H.....1910
Thomas, G. C.....1911
Thomas, V. C.....1908
Thompson, J. M.....1913
Thompson, P. M.....1907
Thompson, E. A.....1909
Thompson, H. B.....1910
Thompson, R. M. A.....1910
Thompson, W. K.....1913
Thomson, A. P.....1917
Thomson, D. J.....1913
Thomson, T. K.....1886
Thomson, R. W.....1892
Thomson, S. E.....1904
Thomson, L. R.....1905–1907
Thomson, J. E.....1906
Thomson, O. R.....1907
Thorne, S. M.....1900
Thornley, J. H.....1908
Thorold, F. W.....1900
Tillson, L. B.....1915
Tillson, E. D.....1905
Tilston, C. E.....1917
Tilston, J. A.....1914
Tipper, G. A.....1909
Titus, C. G.....1910
Titus, O. W.....1917
Tom, J. A.....1915
Tomlinson, B. C.....1917
Toms, C. G.....1908
Topping, V.....1917
Torrance, R. D.....1911
Torrance, T. E.....1913
Tough, W. G. (deceased).....1911

Townsend, C. J.....1904
Townsend, D. T.....1904
Traill, J. J.....1905
Treadgold, W. M.....1905
Trees, S. L.....1903
Trees, A. G.....1909
Treloar, G. E.....1914
Tremaine, R. C. C. (deceased) 1895
Tremayne, J. E.....1916
Trimble, A. V.....1904
Trow, R. M.....1913
Tucker, B. B.....1904
Tufford, A. A.....1917
Tull, W. S.....1914
Turnbull, W. G.....1909
Turner, W. E.....1905
Tuttle, H. A.....1917
Twidale, E. A. (deceased).....1914
Tye, H. W.....1908
Tyrrell, E. J.....1917
Tyrrell, J. W.....1883
Tyrrell, H. G.....1886

U

Uffelmann, W.....1915
Umbach, J. E.....1903
Underwood, J. E.....1909
Ure, W. G.....1913
Uren, A. E.....1905

V

Van Allen, K. M. (deceased)..1910
VanDyke, F. T.....1914
VanEvery, W. W.....1899
VanNorman, C. P.....1908–1909
VanNostrand, J.....1909
Vatcher, A.....1909
Vaughan, J. M.....1905
Venney, L. T.....1910
Vercoe, H. L.....1898
Verity, M. F.....1914
Vickers, N. (deceased).....1911
Vickery, C. L. (deceased).....1906
Villeneuve, T. L.....1908
Von Gunten, C. F.....1913

W

Waddell, H. O.....1914
Wade, E.....1904
Wagner, H. W.....1914
Wagner, N.....1910
Wagner, W. E.....1899
Wagner, H. L.....1905
Waite, J. H. C.....1911
Walcott, W. D.....1911
Waldron, J.....1903
Walker, E. W. (deceased).....1904
Walker, R. M.....1910
Walker, W. J.....1907
Walker, J. A.....1908
Walker, C. M.....1909
Wallace, G. L.....1911
Wallace, H. D. M. (deceased) 1914
Walton, T. (deceased).....1910
Wanless, A. A.....1902
Ward, A. L.....1915
Ward, F. W.....1916
Ward, R. C.....1916
Wardell, A.....1911
Warrington, G. A.....1910
Wass, S. B.....1903
Watson, F. E.....1911
Watson, H. R.....1917
Watson, M. B.....1910
Watson, R. B. (deceased).....1893
Watson, J. P.....1904
Watt, G. H.....1899
Watts, R. E. (deceased).....1913
Waugh, B.....1908
Webb, C. E.....1909
Webb, E. E.....1909
Webster, C. A.....1913
Webster, H.....1913
Wedlake, R. M.....1908
Weeks, M. B.....1897
Weir, D. H.....1913
Weir, F. E.....1915
Weir, H. M.....1900
Weir, J. M.....1904
Weir, R. P.....1908
Weldon, E. A.....1897
Welford, P. G.....1911
Wells, A. F.....1904
Wells, A. R.....1916
Weppler, H. S.....1916
West, A. M.....1908
West, C. W.....1915
Wheler, A. G.....1911
Whelihan, J. A.....1903
White, A. H. V.....1892
White, F.....1903
White, W. R.....1908
White W. J.....1908
White, F. C.....1909
White, H. M.....1910
Whitelaw, A. R.....1909
Whitley, P. L.....1914

Whitside, J. L. (deceased). . . .1910
Wickens, W. S. 1910
Wickett, T. 1889
Wickett, W. E. (deceased). 1906
Widdicombe, A E. (deceas'd) .1916
Wiggins, T. H. 1890
Wigle, A. E. 1914
Wigle, J. A. H. 1914
Wilkes, E. D. 1907
Wilkes, G. H. 1911
Wilkinson, T. A. 1898
Wilkinson, R. G. 1909
Williams, C. G. 1903
Williams, E. R. 1911
Williams, J. A. McK. 1909
Williams, J. N. 1915
Williams, G. K. (deceased). . . 1910
Williamson, O. T. G. 1909
Williamson, D. A. 1898
Willson, R. D. (deceased) 1901
Wilson, A. C. 1914
Wilson, A. F. 1907
Wilson, F. D. 1908
Wilson, F. F. 1909
Wilson, H. A. 1911
Wilson, H. P. 1914
Wilson, J. C. 1915
Wilson, J. N. 1906
Wilson, J. M. 1908
Wilson, L. R. 1909
Wilson, N. D. 1903
Wilson, W. H. 1910
Wing, D. O. 1908
Winters, W. S. 1913
Withrow, W. J. (deceased) . . . 1890
Withrow, F. D. 1900
Wood, C. S. 1911
Wood, E. M. 1906
Wood, G. 1917
Wood, H. A. 1915
Wood, R. F. B. 1913
Woodley, G. E. (deceased). . . .1910
Woods, M. H. 1907
Wookey, S. A. 1909
Woonton, W. G. 1918
Worden, W. G. 1911
Workman, G. R. 1910
Worthington, W. R. 1904
Wright, A. J. 1913
Wright, C. H. C. 1888
Wright, G. W. A. 1907
Wright, L. A. 1910
Wright, R. T. 1894
Wright, W. F. 1904
Wright, W. J. T. 1911
Wrong, F. H. 1911
Wylie, W. H. 1911
Wyman, H. K. 1911–1915

Y

Yeates, E. 1899
Yorke, L. P. 1911
Youell, A. W. (deceased). 1910
Young, A. 1911
Young, C. R. 1903
Young, J. 1907
Young, R. 1908
Young, R. B. 1913
Young, R. W. 1914
Young, S. 1911
Young, W. S. 1910
Young, W. H. 1905

Z

Zahn, H. J. 1902
Zimmer, A. R. 1907
Zinkan, W. E. 1911

THE

CALENDAR

OF THE

University of Toronto

FACULTY OF EDUCATION

1919-1920.

UNIVERSITY OF TORONTO PRESS

THE

CALENDAR

OF THE

University of Toronto

FACULTY OF EDUCATION

1919-1920.

UNIVERSITY OF TORONTO PRESS

ADMINISTRATIVE OFFICERS.

The University.

President: Sir Robert Alexander Falconer, K.C.M.G., M.A., LL.D., D.Litt.

Registrar.....James Brebner, B.A.

Bursar.....Ferdinand Albert Mouré, Esq.

Librarian.....Hugh Hornby Langton, M.A.

Physical Director.....James Warren Barton, M.D.

Superintendents of Buildings and Grounds.....Colin Graham Campbell, B.A.; Arthur D'Orr LePan, B.A.Sc.

Manager of University of Toronto Press.....Richard J. Hamilton, B.A.

Faculty of Education.

President: Sir Robert Alexander Falconer, K.C.M.G., M.A., LL.D., D.Litt.

Dean.....William Pakenham, B.A.

Note:—Communications relating to standing in all Faculties and Departments and to curricula, instruction, and examinations in Graduate Courses, Law, Dentistry, Pharmacy, Agriculture, Music, Gymnastics and Drill, Commerce and Veterinary Science are to be addressed to the Registrar of the University; correspondence regarding curricula, instruction and examinations in a particular Faculty is to be sent to the secretary of that Faculty, while inquiries with reference to College instruction and residence are to be addressed to the Registrar of the College concerned.

Communications to the Faculty of Education should be addressed to the Secretary of the Faculty of Education, Bloor Street, Toronto.

1919 CALENDAR 1919

JANUARY

Sun.	. .	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

FEBRUARY

Sun.	. 2	9	16	23	..	
Mon.	. 3	10	17	24	..	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	..	..

MARCH

Sun.	. 2	9	16	23	30		
Mon.	. 3	10	17	24	31		
Tues.	. 4	11	18	25	..		
Wed.	. 5	12	19	26	..		
Thur.	. 6	13	20	27	..		
Fri.	. 7	14	21	28	..		
Sat.	1	8	15	22	29	..	

APRIL

Sun.	. .	6	13	20	27	
Mon.	. .	7	14	21	28	
Tues.	. 1	8	15	22	29	
Wed.	. 2	9	16	23	30	
Thur.	. 3	10	17	24	..	
Fri.	. 4	11	18	25	..	
Sat.	. 5	12	19	26	..	

MAY

Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. 2	9	16	23	30	
Sat.	. 3	10	17	24	31	

JUNE

Sun.	. 1	8	15	22	29	
Mon.	. 2	9	16	23	30	
Tues.	. 3	10	17	24	..	
Wed.	. 4	11	18	25	..	
Thur.	. 5	12	19	26	..	
Fri.	. 6	13	20	27	..	
Sat.	. 7	14	21	28	..	

JULY

Sun.	. .	6	13	20	27	
Mon.	. .	7	14	21	28	
Tues.	. 1	8	15	22	29	
Wed.	. 2	9	16	23	30	
Thur.	. 3	10	17	24	31	
Fri.	. 4	11	18	25	..	
Sat.	. 5	12	19	26	..	

AUGUST

Sun.	. 3	10	17	24	31	
Mon.	. 4	11	18	25	..	
Tues.	. 5	12	19	26	..	
Wed.	. 6	13	20	27	..	
Thur.	. 7	14	21	28	..	
Fri.	1	8	15	22	29	..
Sat.	2	9	16	23	30	..

SEPTEMBER

Sun.	. .	7	14	21	28	
Mon.	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	..	
Thur.	. 4	11	18	25	..	
Fri.	. 5	12	19	26	..	
Sat.	. 6	13	20	27	..	

OCTOBER

Sun.	.	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

NOVEMBER

Sun.	. 2	9	16	23	30	
Mon.	. 3	10	17	24	..	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	29	..

DECEMBER

Sun.	. .	7	14	21	28	
Mon.	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	31	
Thur.	. 4	11	18	25	..	
Fri.	. 5	12	19	26	..	
Sat.	. 6	13	20	27	..	

1920 CALENDAR 1920

JANUARY

Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. 2	9	16	23	30	
Sat.	. 3	10	17	24	31	

FEBRUARY

Sun.	. 1	8	15	22	29	
Mon.	. 2	9	16	23	..	
Tues.	. 3	10	17	24	..	
Wed.	. 4	11	18	25	..	
Thur.	. 5	12	19	26	..	
Fri.	. 6	13	20	27	..	
Sat.	. 7	14	21	28	..	

MARCH

Sun.	. .	7	14	21	28	
Mon.	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	31	
Thur.	. 4	11	18	25	.	
Fri.	. .	5	12	19	26	..
Sat.	. 6	13	20	27	..	

APRIL

Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. .	2	9	16	23	30
Sat.	. 3	10	17	24	..	

MAY

Sun.	. 2	9	16	23	30	
Mon.	. 3	10	17	24	31	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	29	..

JUNE

Sun.	. .	6	13	20	27	
Mon.	. .	7	14	21	28	
Tues.	. 1	8	15	22	29	
Wed.	. 2	9	16	23	30	
Thur.	. 3	10	17	24	..	
Fri.	. 4	11	18	25	..	
Sat.	. 5	12	19	26	..	

JULY

Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. 2	9	16	23	30	
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Fri.	. 6	13	20	27	..	
Sat.	. 7	14	21	28	..	

SEPTEMBER

Sun.	. .	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
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Fri.	. .	3	10	17	24	..
Sat.	. 4	11	18	25	..	

OCTOBER

Sun.	. 3	10	17	24	31	
Mon.	. 4	11	18	25	..	
Tues.	. 5	12	19	26	..	
Wed.	. 6	13	20	27	..	
Thur.	. 7	14	21	28	..	
Fri.	. 1	8	15	22	29	..
Sat.	2	9	16	23	30	..

NOVEMBER

Sun.	. .	7	14	21	28	
Mon	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	..	
Thur.	. 4	11	18	25	..	
Fri.	. .	5	12	19	26	..
Sat.	. 6	13	20	27	..	

DECEMBER

Sun.	. .	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. .	3	10	17	24	31
Sat.	. 4	11	18	25	..	

CALENDAR, 1919-1920.

1919—July 8.....Summer Session begins.
Aug. 8.....Summer Session closes.
Sept. 29.....Registration begins.
Sept. 30.....The Opening Address by the President to the students of all the Faculties at 3 p.m. in Convocation Hall. Autumn Term begins.
Oct. 1.....Opening Lecture at 10 a.m. in the Assembly Hall of the Faculty of Education.
Oct. 2.....Meeting of Council.
Nov. 6.....Meeting of Council.
Dec. 4.....Meeting of Council.
Dec. 19.....Last day of Lectures. Term ends at 12 noon.
Dec. 19.....Railway certificates issued at 12 noon.
1920—Jan. 6.....Winter Term begins.
Jan. 8.....Meeting of Council.
Feb. 5.....Meeting of Council.
Mar. 6.....Meeting of Council.
Mar. 31.....Spring Term begins.
April 1.....Easter Vacation begins.
April 12.....Easter Vacation ends.
May 1.....Meeting of Council.
June 4.....University Commencement.
June 18.....Session closes.

FACULTY OF EDUCATION

1919-1920.

President: SIR ROBERT ALEXANDER FALCONER, K.C.M.G., M.A., LL.D., D.LITT.

Dean.....WILLIAM PAKENHAM, B.A.

Secretary.....

HENRY JOB CRAWFORD, B.A.,
Professor of Education and Headmaster of The University Schools.
310 Roncesvalles Avenue.

PETER SANDIFORD, M.Sc., PH.D.,
Associate Professor of Education. 22 Hilton Avenue.

FREDERICK ETHBERT COOMBS, M.A.,
Assistant Professor of Methods in Elementary Subjects and Chief Instructor in Elementary Subjects in The University Schools.
158 Delaware Avenue.

GEORGE AUGUSTUS CORNISH, B.A.,
Assistant Professor of Methods in Science and Chief Instructor in Science in The University Schools. 38 St. Clair Avenue East.

JOHN THOMAS CRAWFORD, B.A.,
Assistant Professor of Methods in Mathematics and Chief Instructor in Mathematics in The University Schools. 168 Walmer Road.

WILLIAM CHALMERS FERGUSON, B.A.,
Assistant Professor of Methods in French and German and Chief Instructor in French and German in The University Schools.
6 Hilton Avenue.

GEORGE MALLORY JONES, B.A.,
Assistant Professor of Methods in English and Chief Instructor in English in The University Schools. 780 Keele Street.

JAMES WARREN BARTON, M.D.,
Instructor in Physical Training. 318 Palmerston Boulevard.

ALEXANDER TOM CRINGAN,
Instructor in Music. 633 Church Street.

WILLIAM JAMES DUNLOP, B.A.,
Lecturer in Methods in Elementary Subjects.
32 Palmerston Gardens.

SAMUEL WALTER PERRY, B.A.,
Lecturer in Art and Commercial Work and Chief Instructor in Art and Commercial Subjects in The University Schools.
406 Brunswick Avenue.

ALLEN NELSON SCARROW,
Lecturer in Manual Training and Instructor in The University Schools. 150 Delaware Avenue.

DAVID HIRAM AXON,
Substitute Instructor in The University Schools.
122 Barton Avenue.

GEORGE NEVILLE BRAMFITT, B.A.,
Instructor in The University Schools. 35 Munro Park Avenue.

JOHN OLIVER CARLISLE, M.A.,
Instructor in The University Schools. 111 Durie Street.

GEORGE ALTON CLINE, M.A.,
Instructor in The University Schools.

ERNEST LE ROY DANIHER, B.A.,
Instructor in The University Schools. 26 Page Street.

HORACE ALEXANDER GRAINGER, B.A.,
Instructor in The University Schools. 25 Westmount Avenue.

FRANK HALBUS, B.A.,
Instructor in The University Schools. 262 St. George Street.

DOUGLAS EWART HAMILTON, M.A.,
Instructor in The University Schools. 2 Dalton Road.

JOSEPH A. IRWIN,
Instructor in The University Schools. 60 Grace Street.

HUGH BRYANS KILGOUR, B.A.,
Instructor in The University Schools. 3 North Street.

WILLIAM JAMES LOUGHEED, M.A.,
Instructor in The University Schools. 316 Indian Road.

HAROLD GORDON MANNING, B.A.,
Instructor in The University Schools.
East Residence, University of Toronto.

NORMAN LESLIE MURCH, B.A.,
Instructor in The University Schools. 1431 Lansdowne Avenue.

THOMAS M. PORTER,
Instructor in The University Schools. 64 Winchester Street.

WALTER LAWRENCE CHRISTIE RICHARDSON,
Instructor in The University Schools. 83 Pine Crest Road.

WALTER H. WILLIAMS, M.A.,
Instructor in The University Schools. 57 Walmsley Boulevard.

JAMES G. WORKMAN, B.A.,
Instructor in The University Schools. Birch Cliff Post Office.

MEMBERS OF THE STAFF OF RYERSON SCHOOL, 1918-19.

Supervisor of Observation and Practice-Teaching:

JOHN B. BRENNAN, B.A. ..... 583 Dovercourt Road.

Assistant Supervisors:

MISS M. L. BALMER ..... 54 Roncesvalles Avenue.
MISS M. W. CASTLE ..... 1 Harvie Avenue.
MISS R. M. DAVIDSON ..... 338 Albany Avenue.
MISS E. M. HALL ..... Weston, Ont.
MISS J. C. HELYAR ..... 439 Sackville Street.
MISS E. M. JOLLEY ..... 300 Crawford Street.
MISS K. E. MARTIN ..... 26 Summerhill Avenue.
MR. H. W. MCINTOSH ..... 450 Clendenan Avenue.
MISS M. L. MCLENNAN ..... 11 Howland Avenue.
MISS A. F. MITCHELL ..... 168 Geoffrey Street.
MISS M. P. RUNDLE ..... 697 Spadina Avenue.
MISS E. J. SADLIER ..... 268 Robert Street.
MISS M. P. STEPHEN ..... 291 Euclid Avenue.
MISS JEAN TODD ..... 16 Dowling Aparts.
MR. J. E. WILKINSON .....
MISS M. I. WILSON ..... 98 Wells Street.

MEMBERS OF THE STAFF OF JARVIS STREET COLLEGIATE INSTITUTE, 1918-19.

Supervisor of Observation and Practice-Teaching:

JOHN JEFFRIES, B.A. ..... 41 Oakmount Rd.

Assistant Supervisors of Observation and Practice-Teaching:

MR. A. E. ALLIN, B.A. ..... 5 Pinewood Avenue.
MR. C. H. BARNES ..... 403 Carlton Street.
MR. C. L. BARNES, B.A. ..... 133 Pacific Avenue.
MISS HELEN F. DURIE, B.A. ..... 306 St. George Street.
MR. E. J. HALBERT, B.A. ..... 84 Mavety Street.
DR. E. A. HARDY, B.A. ..... 81 Collier Street.
MR. W. A. JENNINGS, B.A. ..... 59 Thorold Avenue.
MR. JOHN MCKELLAR, B.A. ..... 674 Spadina Avenue.
MR. W. E. MURDOCH, M.A. ..... 35 Jackman Avenue.
MISS MARGUERITE O'CONNELL, B.A. ..... 428 Jarvis Street.
MR. JOHN SINCLAIR, B.A. ..... 36 Cowan Avenue.
MISS RUTH SPENCE, B.A. ..... 554 Spadina Avenue.
MR. H. B. TAPSCOTT, M.A. ..... Weston, Ont.
MISS JANIE THOMAS, M.A. ..... 92 Balmoral Avenue.

THE FACULTY OF EDUCATION.

GENERAL INFORMATION.

The Faculty of Education was created by resolution of the Board of Governors of the University in December, 1906. Its first curriculum was adopted in June, 1907, and its first session began in October, 1907.

The Faculty of Education is the University's professional school of education. It trains candidates for diplomas and certificates as teachers and in particular for Provincial certificates as teachers of Household Science, and Physical Culture, as First Class teachers, High School Assistants and Specialists in Classics, English and History, Moderns and History, French and German, Mathematics, Mathematics and Physics, Science, and Household Science. It also offers courses for the B.Paed., and D.Paed. degrees. The courses of the Faculty of Education are given during the Regular session, the Supplementary Autumn session, and the Summer Session.

The buildings of the Faculty of Education on Bloor Street contain well-equipped and well-ventilated lecture-rooms, laboratories, and reading-rooms for the accommodation of the students, and model class-rooms for observation and practice-teaching. So far as necessary this observation and practice-teaching is supplemented by observation and practice-teaching in city schools in the neighbourhood.

While the chief exercises of the Faculty of Education will be conducted in the buildings on Bloor Street, the students may use the University's library, gymnasium, athletic fields, etc., under such conditions as obtain with other students. They will also be admitted free to the Royal Ontario Museum, Bloor Street, from 9 a.m. to 5 p.m., on presentation of their registration cards. Thus, while they are subject to the same regulations, they enjoy all the privileges of the other University students.

BOARD AND LODGING.

Lodging and Board are readily obtained in private boarding-houses within convenient distance of the University at a cost of from five dollars per week upwards for lodging with board; or, rooms may be rented at a cost of from one dollar and one-half per week upwards, and board obtained separately at reasonable rates. A list of accredited boarding-houses is

kept by the Secretary of the Faculty of Education, the Secretary of the Young Men's Christian Association of the University, the Secretary of the Young Women's Christian Association, and the Dean of Annesley Hall. Students are recommended to consult these officers with reference to the selection of suitable accommodation. In addition to the University Residences and Dining Hall the following residences are also available: for men, Trinity College, St. Michael's College, Wycliffe College, Knox College; for women, Queen's Hall, Annesley Hall, South Hall, St. Hilda's College.

The Secretary of the Faculty of Education will forward an accredited list of boarding-houses on request. Members of a special committee will meet, and assist students in the selection of boarding-houses.

SUMMER SESSION

The Faculty of Education offers in 1919 for those exempt from attendance, Summer Courses in the subjects of the First Class Grade B examinations. It also offers in 1920 Summer Courses in the Educational Psychology and School Administration of the Courses for Degrees in Pedagogy.

COURSES.

The following courses are offered:

I. Courses for Interim First Class Grade A and Grade B, Ordinary High School, and High School Specialists' certificates, and for Elementary certificates in Physical Culture.

II. Courses for the B.Paed. and D.Paed. degrees.

III. A Course for the Ordinary certificates as teachers of Household Science.

The courses and regulations for Provincial certificates as defined herein are valid only for the year 1919-20.

I.

COURSES FOR INTERIM FIRST CLASS GRADE A, GRADE B, ORDINARY HIGH SCHOOL AND HIGH SCHOOL SPECIALISTS' CERTIFICATES, AND ELEMENTARY CERTIFICATES IN PHYSICAL CULTURE.

SESSIONS.

1. (1) (*a*) Enrolment in classes of the Main session will begin Tuesday, September 30th, at 10 a.m., and the instruction will begin October 1st, at 10 a.m. The Autumn Term will end Friday, December 19th, at 12 noon, and the Winter Term will begin Tuesday, January 6th, at 9 a.m. The Spring Term will begin April 12th, and end June 18th.

(*b*) Subject to the approval of the Minister of Education candidates for First Class Grade B or Ordinary High School certificates who are required to re-attend may enter January 6th and remain until the close of the session in June.

(2) Enrolment in the classes of the Supplementary Session will begin Tuesday, September 30th, at 10 a.m., and the instruction will begin October 1st at 10 a.m. The Supplementary Session will end Friday, December 19th, at 12 noon.

(3) Courses for Interim First Class Grade B, Ordinary High School, and High School Specialists' certificates will be given in the Main Session; courses for First Class Grade A certificates in the Supplementary Session; courses for Elementary certificates in Physical Culture in both the Main and the Supplementary Sessions.

DUTIES OF STUDENTS.

2. (1) All students are required to review, before the session opens, such Public and High School courses as are the academic bases of their professional courses in the Faculty of Education.

(2) Regular attendance is indispensable, except for such students as are exempt from attendance under the regulations of the Department of Education, and for such other students of the Main session as are experienced teachers and are permitted by the Dean to act, after Christmas, for not more than a total of one fortnight, as substitute teachers in those schools of the Provincial system of Ontario for which their course of training is intended to fit them. A return of the attendance of each student will be made to the Minister of Education at the close of the session.

(3) (*a*) Students whose class-work shows them to be unduly deficient in scholarship, or whose conduct or progress is unsatisfactory, may be dismissed from attendance by the Dean at any time during the session. The names of students found to be deficient in scholarship will be reported to the Dean before the Christmas vacation by the Masters in charge of the classes concerned.

(*b*) On the Dean's report to the Minister of Education as to the physical unfitness of a student for training for a Provincial certificate as a teacher, the Minister may require a special medical examination of such student, and, as a result thereof, may direct that his registration for such training be cancelled.

FEES.

3. (1) (*a*) The annual fee for the Course for Interim First Class Grade B or Ordinary High School certificates, which includes the library, gymnasium, and examination fees, is $25.00; that for the course for Interim First Class Grade A certificates is $15. The fee for the examination in the Course for Interim First Class Grade B or High School Assistants' certificates (with Specialists' certificates) when the examination is taken by students not in attendance, will be $20.00, or $5.00 for each of Parts II and III and $10.00 for Part I; that for the examination for Interim First Class Grade A certificates $10.00, *i.e.*, $5.00 for Part I and $5.00 for Part II. The fee for the University diploma will be $2.00. A library deposit of $1.00 will be required of all students.

(*b*) When an Interim High School Specialist Course is taken concurrently with the Course for an Interim Ordinary High School certificate, or when an Interim High School Specialist examination is taken concurrently with the examination for an Interim Ordinary High School certificate, there is no additional fee. The fee for a specialist course or examination, one or both, taken apart from the course or examination for an Interim Ordinary High School certificate, will be $5.00 per course or per examination, one or both, as the case may be.

(*c*) As the course for the Elementary certificate in Physical Culture is an obligatory part of the course for Interim Ordinary High School certificates and of one of the courses for Interim First Class Grade A certificates, an additional fee is not required.

(2) All students exempt from attendance who are duly registered in the Course for Interim First Class Grade B or Ordinary High School certificates, and who pay a fee of $10.00 (which will not in this case include the fee for examination) may receive from the staff of the Faculty of Education such guidance in their courses as may be reasonably expected by such students.

(3) Each male student in attendance at the Main Session will be required to contribute $1 to the maintenance of the Students' Administrative Council.

STUDENT SOCIETIES.

4. Various religious, athletic, literary, and dramatic associations are formed each session. For professional improvement all students are required to share in the activities of the literary and dramatic associations.

APPEALS.

5. The answer papers of the final examinations of all unsuccessful candidates are re-read by the examiners, and the results of the first reading reconsidered before a decision to reject is reached. Despite this fact any unsuccessful candidate may have his case considered a third time if within two weeks after the announcement of the results he lodges with the Minister of Education his appeal, with a statement of the grounds on which it is based, and with a fee of $2.00. If made within the two weeks following, the fee will be $5, and no appeal will be entertained thereafter. The fee will be refunded if the appeal is sustained.

A.

COURSE FOR INTERIM FIRST CLASS GRADE B CERTIFICATES.

PURPOSE.

6. The Course for Interim First Class Grade B certificates prepares candidates therefor in the theory and art of organizing, governing, and instructing the pupils of the Public and Separate Schools and of Grade C Continuation Schools.

CONDITIONS OF ADMISSION.

7. (1) Except as provided in (2) below, an applicant for admission to the course for an Interim First Class Grade B certificate should make application not later than September 30th, to the Secretary of the Faculty of Education on a form to be obtained from him, and should submit the following with this application, on official forms also to be supplied by the Secretary:

(*a*) A certificate from the Deputy Registrar-General of Births, Parliament Buildings, Toronto, or an affidavit by one of the parents or other relative, or other person cognizant of the fact, that the applicant will be at least 18 years of age before October 1, 1919.

(*b*) A certificate from a clergyman or other competent authority that he is of good moral character.

(*c*) A certificate from a duly qualified medical practitioner that for the purposes of this certificate he has made a careful examination of the applicant, and certifies as follows:

(i) That he is free from heart disease or any other serious organic affection;

(ii) That he is free from pulmonary affection, defective hearing, or seriously defective eyesight, or abnormal conditions of appearance which would interfere with his work as a teacher; and

(iii) That in other respects also he is physically able for the work of a teacher as prescribed in the courses of study of the Faculty of Education and of the Provincial Schools represented in the certificate for which he is a candidate. See also Section 2 (3) (*b*), p. 13.

(*d*) An agreement, if successful in obtaining a teacher's certificate, to teach thereon in Ontario, for at least the first year of his subsequent teaching experience.

NOTICE.—A violation of this agreement will render the certificate invalid.

(*e*) A certificate from a competent authority that he is a British subject.

(*f*) One of the following:

COURSE FOR INTERIM FIRST CLASS GRADE B.

(i) His certificate of graduation as Bachelor or Master of Arts from a British university, after a regular university course approved by the Minister of Education as to standard and as to the content of the undergraduate courses.

(ii) His Senior Teachers' certificate.

(iii) His full certificate for admission into the Faculties of Education.

(2) An applicant for admission to this course who is not a candidate for the certificate of the Ontario Department of Education must comply with such conditions of admission as the Council of the Faculty of Education may determine.

(3) Applications, by students not in attendance, for admission to the examinations should be made, at least one month before the examinations begin, to the Secretary of the Faculty of Education, University of Toronto, on an official form to be obtained from the Secretary.

TEXT-BOOKS.

8. The text-books for the academic work are those prescribed for the Public, Separate, and High Schools of Ontario in each subject of the student's course.

Students should also supply themselves with the professional text-books whose titles appear in italics in the lists given below under each subject of the course. Reference books, source books, and encyclopaedias to supplement these text-books are free of access in the library of the Faculty of Education.

PROGRAMME OF STUDIES.

9. The course of training consists of three parts as follows:

Part I: The Principles of Education, Educational Psychology, School Management and Law, Spelling, Composition, Grammar, Literature, History, Arithmetic, Algebra, Geometry, Geography, Latin, Hygiene and (optional) one of French, German, Greek.

NOTE.—As the methodology of Greek is practically the same as that of Latin and that of German the same as that of French, no special provision will be made herein for courses in methods in Greek and German; but students who take Greek or German will be required to make the necessary applications of methods in Greek and German in the practical work in Observation and Teaching.

COURSE FOR INTERIM FIRST CLASS GRADE B.

Part II:

Writing, Reading, Art, Vocal Music, Physical Culture, Nature Study, Elementary Science, Manual Training; Household Science (for women).

Part III:

Observation and practice-teaching in the Kindergarten-primary and Forms I-IV of urban Public Schools and the Lower School of the High Schools, with observations in the Kindergarten, Form V, and ungraded rural Public Schools.

MODIFICATIONS OF COURSE.

10. (1) Subject to the approval of the Minister of Education, the Faculty of Education may make such modifications of the scheme of subjects of Part I, as will suit the conditions of candidates for Provincial certificates who obtained their academic standing in courses which did not include Latin.

(2) Students who hold Provincial professional certificates in Physical Culture, Art, Household Science, Manual Training, Vocal Music, and the Commercial subjects, will take the observation and practice-teaching, but will be exempted from the examinations in said subject or subjects.

(3) Students who have passed in the Manual Training, Household Science, or Writing of the Lower School, or in the Art of the Middle School shall complete, to the satisfaction of the instructor or instructors therein, the methodology, but will be exempted from the extension work of the course or courses concerned.

(4) In the oral examinations and exercises in Vocal Music the instructor will give due consideration to the claims of the candidates who report themselves as incapable of learning to sing, provided that such claims are presented to the instructor at the beginning of the session. In no case, however, will such consideration involve exemption from attendance at the classes or from the written examinations in the subject. If any candidate is unable to teach music that fact will be stated on his certificate.

ORGANIZATION OF COURSE.

11. (1) The following introductory work will be taken up at the beginning of the session:

(*a*) About 20 lectures upon the topics, *Introduction* and *General Method* in the course in the Principles of Education.

(*b*) A discussion of the functional value of each of the courses defined herein.

COURSE FOR INTERIM FIRST CLASS GRADE B.

(*c*) Supervised observation and practice-teaching lessons (about ten of each) in the different grades or forms of the Public and Separate Schools and Lower Schools of the High Schools.

(2) The instruction in the special methodology of the subjects of Part I will be accompanied by a review from the academic standpoint, of such portions of the course in each subject as may be necessary to determine the scholarship of the students and to illustrate the methods of instruction in that subject, dealing in particular with those parts of the course that are difficult of presentation. In the course in the subjects of Part II will be included such an extension of the work beyond the limits set by the courses of the Public Schools as time will permit.

(3) In the order and the grouping of the courses in the various subjects, due regard will be had to the character of each subject, to its correlations with other subjects, and to the logical development of the courses.

(4) So far as conditions permit, the programme of instruction will be organized on the basis of intensive study of a few subjects at a time.

(5) (*a*) The programme of instruction for each class, exclusive of observation and practice-teaching, will require about twenty class-periods of 45 minutes each weekly, or the equivalent thereof, during the Session. These class-periods will be distributed among the various prescribed courses approximately as follows: Principles of Education 40, Educational Psychology 40, School Management 40, English (Spelling, Literature, Grammar, Composition, Reading) 120, Mathematics (Arithmetic, Algebra, Geometry) 60, History and Geography 40, Nature Study and Elementary Science 50, Latin 20, French 15, Music 30, Manual Training 30, Household Science 30, Art 40, Writing 10, Hygiene 10, Physical Culture 30.

(*b*) (i) The courses in English, Mathematics, Vocal Music, and Physical Culture will continue throughout the session.

(ii) The courses in the other subjects will begin as may be arranged by the Dean and will continue until completed.

(*c*) The observation work will begin in the third week of the session and the practice-teaching in the fifth week. Exclusive of the introductory work, the programme of instruction will include for each student at least 40 observation lessons and 20 practice-teaching lessons. These numbers will be increased to meet the needs of individual students.

COURSE FOR INTERIM FIRST CLASS GRADE B.

OBSERVATION AND PRACTICE-TEACHING.

12. (1) The Introductory Course defined above will be followed by systematic observation and practice-teaching under the general supervision of the instructors in the Faculty of Education.

(2) The students will be divided into suitable groups and the work of observation and practice-teaching will be taken up systematically per time-table arranged from time to time. So far as practicable that group to which the student belongs will be present at the discussions on his observation and practice-teaching lessons.

(3) (*a*) The observation and practice-teaching lessons for each student will be arranged to represent, as far as practicable, the work of the Public and Separate Schools in all subjects and grades, including the Kindergarten-primary, and the work of the Lower Schools of the High Schools. There will also be supervised observation in the Kindergarten and in ungraded rural Public Schools.

(*b*) Continuous practice-teaching for several periods will be required, the student being wholly responsible for the management of the class.

(4) Students will be notified of the subject and the scope of the observation lesson, and should prepare the lesson beforehand. After observing the lesson, they will discuss it with the teacher concerned.

(5) Students will be notified of the subject and scope of the practice-teaching lesson by the teacher concerned, and will prepare a plan of each practice-teaching lesson for submission to the teacher.

(6) (*a*) Model lessons will be taught by the teachers of the practice schools in accordance with the regular programme of said schools.

(*b*) The instructors of the Faculty of Education will develop the details of their subject in their teaching order, and after each suitable step will also themselves teach model lessons in special classes and in the practice schools.

(7) (*a*) The necessary applications of the Principles of Education and Educational Psychology and of special methodology will be made systematically in connection with the observation lessons and the practice-teaching; so that the course may be taken up in terms of the child's mind and growth. Throughout the course, the instructor in the Principles of Education and Educational Psychology will himself illustrate by actual teaching the principles he has discussed in class.

(*b*) As far as practicable, the instructors in the Faculty of Education will be present at the observation lessons and practice-teaching of the students and will make jointly the criticism and valuation of their work.

EXAMINATIONS.

SUBJECTS AND STANDARDS.

13. (1) For the purpose of determining the final standing of students the courses in Parts I, II, and III, are classified into the following subjects:

Parts I and II: The Principles of Education, Educational Psychology, School Management and Law, Primary Reading and Spelling, Grammar and Composition, Literature and Advanced Reading, Arithmetic, Algebra and Geometry, History, Latin, French, Geography, Nature Study and Elementary Science, Hygiene, Writing, Art, Vocal Music, Physical Culture, Manual Training, Household Science.

Part III: Observation; Practice-teaching.

(2) (*a*) Subject to the conditions prescribed herein the final standing of students in attendance will be determined by the combined results of the sessional records and the records of the final examinations in the subjects of Parts I and II, and by the result of the records of the observation and practice-teaching of Part III.

(*b*) The sessional records represent oral and written exercises and tests, practical work, practice in valuing the answer-papers of pupils, and such other examinations as the staff may prescribe.

(*c*) At the close of each term there will be final examinations in such courses of Parts I and II, as have been completed in said term.

(*d*) At the examinations in Parts I and II each paper will contain questions in methodology, based upon the academic subjects which will test the candidate's academic knowledge, and, if his sessional records and his answers to these questions show that his academic knowledge is defective, he will be rejected on this ground alone.

(*e*) The maximum marks assigned to each subject in Parts I and II will be 100. In the subjects of Part I a maximum of 40% of the marks will be assigned to the sessional records, and 60% to the final written examination. In the subjects of Part II a maximum of 60% of the marks will be assigned to the sessional records and 40% to the final written examination.

(*f*) A maximum of 800 marks will be assigned to practice-teaching and of 400 to observation. The standing of students in observation and in practice-teaching will be based upon their records in the lessons following those which form part of the Introductory Courses.

CERTIFICATES.

14. (1) (*a*) A student who is nineteen years of age before October 1st, 1919, and who obtains 50% of the marks in each subject of Parts I and II and 60% of the marks in each of the divisions of Part III, may, on the recommendation of the examiners, be awarded by the Minister of Education an Interim First Class Grade B certificate.

(*b*) A student who is not nineteen years of age before October 1st, 1919, and who obtains 50% of the marks in each subject of Parts I and II, and 60% of the marks in each of the divisions of Part III, may, on the recommendation of the examiners, be awarded by the Minister of Education an Interim Second Class certificate. This Interim Second Class certificate may, on application to the Minister of Education, be exchanged for any Interim First Class Grade B certificate when the holder thereof attains his twentieth year.

(2) A student who passes in Part III and fails in not more than five subjects of Parts I and II and who does not receive less than 45% in any subject, may, on the recommendation of the examiners, be granted by the Minister of Education, an Interim Second Class certificate.

(3) A student who passes in Part III and who fails in not more than five subjects of Parts I and II may be exempted from further attendance and may complete his standing from a First Class Grade B Certificate by re-writing at one annual examination or, separately, at different annual examinations, the examinations in the subject or subjects in which he failed.

(4) All other students who have failed to obtain the necessary final standing will be required to attend another session, beginning after the Christmas vacation.

(5) (*a*) (i) Candidates who hold Permanent Second Class certificates with the academic standing required for admission to the Faculties of Education and who submit certificates of at least three years' successful experience from the Public or Separate School inspectors under whom they have taught during that period, will be exempted from attendance, but will take the final examinations prescribed for Parts I and II, and must

also satisfy the examiners by practical tests of their ability to teach the subjects of Form V of the Public Schools and of Grade C Continuation Schools.

(ii) Candidates who failed at an examination for First Class certificates under former regulations, and who were exempted from subsequent attendance at a Faculty of Education, will take, not later than a date determined in each case by the Minister of Education, the final examination papers as prescribed herein, but their standing will be determined in the subjects or Parts as constituted under the regulations in force when they first wrote.

(iii) Candidates who have been exempted by the Minister of Education from attendance at a Faculty of Education on account of equivalent training in other provinces or countries and who are required to write on the final examinations of the Faculties of Education, will take all final examinations in the subjects of Parts I and II and will also satisfy the examiners by teaching and other tests that they are competent to direct the practical work in the subjects covered by the certificates for which they are candidates.

(*b*) (i) The pass standard of all candidates exempt from attendance is the same as that for students in attendance but no allowance will be made for sessional work, if any, in the case of candidates not in attendance.

(ii) The final examinations in Reading, Vocal Music, and Physical Culture for students exempt from attendance will include both written and practical tests, to the latter of which 60 marks will be assigned.

(*c*) (i) Candidates exempt from attendance shall take their practical tests in Part III at such times during the session as may be agreed upon with the examiners. They shall take their examinations in the subjects of Parts I and II in June on dates to be determined by the examiners or, in part, in June and, in part, at such times during the session as are set apart for the examinations of candidates in attendance.

(ii) Candidates exempt from attendance may take their written examination in Parts I and II at Toronto or at such local centres and under such conditions as may be determined by the Senate. They must, however, take their practical tests in Reading, Vocal Music, Physical Culture, and Teaching at Toronto.

DIPLOMAS.

15. Successful candidates who are awarded Interim First Class Grade B certificates by the Minister of Education, and such other successful candidates as were admitted to the course under Section 7 (2), p. 16, may be awarded University diplomas.

B.

COURSE FOR INTERIM ORDINARY HIGH SCHOOL CERTIFICATES.

PURPOSE.

16. The Course for Interim Ordinary High School certificates prepares candidates therefor in the theory and art of organizing, governing, and instructing pupils in the Continuation Schools, Grades A and B and in High Schools.

CONDITIONS OF ADMISSION.

17. (1) Except as provided in (2) below, an applicant for admission to the course for an Interim Ordinary High School certificate should make application not later than September 30th, to the Secretary of the Faculty of Education on a form to be obtained from him and should submit with this application, on official forms also to be supplied by the Secretary:

(*a*) A certificate from the Deputy Registrar-General of Births, Parliament Buildings, Toronto, or an affidavit by one of the parents or other relative, or other person cognizant of the fact, that the applicant will be at least 20 years of age before October 1st, 1919.

(*b*) A certificate from a clergyman or other competent authority that he is of good moral character.

(*c*) A certificate from a duly qualified medical practitioner that for the purposes of this certificate he has made a careful examination of the applicant, and certifies as follows: (i) that he is free from heart disease or any other serious organic affection; (ii) that he is free from pulmonary affection, defective hearing, or seriously defective eyesight, or abnormal conditions of appearance which would interfere with his work as a teacher; and (iii) that in other respects also he is physically able for the work of a teacher as prescribed in the courses of study of the Faculty of Education and of the Provincial Schools represented in the certificate for which he is a candidate. (See also Section 2 (3) (*b*), p. 13.)

(*d*) An agreement, if successful in obtaining a teacher's certificate, to teach thereon in Ontario, for at least the first year of his subsequent teaching experience.

NOTICE.—A violation of this agreement will render the certificate invalid.

(*e*) A certificate from a competent authority that he is a British subject.

(*f*) His certificate of graduation as Bachelor or Master of Arts from a British university, after a regular university course approved by the Minister of Education as to standard and as to content of the undergraduate courses.

COURSE FOR INTERIM ORDINARY HIGH SCHOOL—*Cont.*

(2) An applicant for admission to this course who is not a candidate for the certificate of the Ontario Department of Education must comply with such conditions of admission as the Council of the Faculty of Education may determine.

(3) Applications, by students not in attendance, for admission to the examinations should be made, at least one month before the examinations begin, to the Secretary of the Faculty of Education, University of Toronto, on an official form to be obtained from the Secretary.

TEXT-BOOKS.

18. The text-books for the academic work are those prescribed for the Lower and Middle Schools of the High Schools of Ontario in each subject of the student's course.

For Observation and Practice-teaching students should supply themselves with copies of the text-books authorized for use in the above-named grades of schools. They should also supply themselves with the professional text-books whose titles appear in italics in the lists given below under each subject. In certain cases, especially in the courses in methods, the instructor may require additional or alternative text-books. Reference books, source books, and encyclopaedias to supplement these text-books are free of access in the library of the Faculty of Education.

PROGRAMME OF STUDIES.

19. The course of training for Interim Ordinary High School certificates consists of three Parts as follows:

Part I: The Principles of Education, Educational Psychology, School Management and Law, English (Grammar, Literature, Composition), Hygiene, History, Mathematics (Arithmetic, Algebra, Geometry), Geography, Latin, and any one of the following: French, German, Greek, Science (Elementary Science, Physics, Chemistry, Biology).

Part II: Reading, Physical Culture, Vocal Music (optional).

Part III: Observation and Practice-teaching in the Lower and Middle Schools of the High Schools, with Observation in the Upper School of the High Schools.

MODIFICATION OF COURSES.

20. Students who hold Provincial professional certificates in Physical Culture will be exempted from the examinations thereon but will take the Observation and Practice-teaching therefor.

COURSE FOR INTERIM ORDINARY HIGH SCHOOL—*Cont.*

ORGANIZATION OF COURSES.

21. (1) The following introductory work will be taken up at the beginning of the session.

(*a*) Not more than 20 lectures upon the topics, *Introduction* and *General Method* in the course in the Principles of Education.

(*b*) A discussion of the functional value of each of the courses defined herein.

(*c*) Supervised Observation and Practice lessons, (about ten of each) in the different grades or forms of the Lower and Middle Schools of the High Schools.

(2) The instruction in the special methodology of the subjects of Parts I and II, will be accompanied by a review from the academic standpoint of such portions of each subject as may be necessary to determine the scholarship of the students and to illustrate the methods of instruction in that subject, dealing in particular with those parts of the course that are difficult of presentation.

(3) In the order and grouping of the courses due regard will be had to the character of each subject, to its correlations with other subjects, and to the logical development of the courses.

(4) So far as the conditions permit the programme of instruction will be organized on the basis of intensive study of a few subjects at a time.

(5) (*a*) The programme of instruction, exclusive of Observation and Practice-teaching, will require about 20 lectures of 45 minutes each, weekly, during the session. These lectures will be distributed among the various prescribed courses approximately as follows: Principles of Education 50, Educational Psychology 50, School Management and Law 50, English 90, History 15, Geography 15, Mathematics 90, Latin 30, Hygiene 10, Reading 20, French and German 40, Greek 20, Science 40, Physical Culture 100, Vocal Music 30.

(*b*) The courses in Mathematics, English, Physical Culture, and Vocal Music will begin at the opening of the session and will continue until the close; those in the other subjects will be given, as far as practicable, in correlation with the Observation and Practice-teaching and will continue until completed.

(*c*) The Observation work will begin in the third week of the session, and the Practice-teaching in the fifth week. Exclusive of the introductory work, the programme of instruction will include for each student at least 40 Observation lessons and 20 Practice-teaching lessons. These numbers may be increased to meet the needs of individual students.

COURSE FOR INTERIM ORDINARY HIGH SCHOOL—*Cont.*

OBSERVATION AND PRACTICE-TEACHING.

22. (1) The introductory course defined herein will be followed by systematic Observation and Practice-teaching, under the general supervision of the instructors in the Faculty of Education.

(2) The students will be divided into suitable groups, and the work of Observation and Practice-teaching will be taken up systematically per time-table arranged from time to time. So far as practicable that group to which the teacher-in-training belongs will be present at the discussion on his Observation and Practice-teaching lessons.

(3) (*a*) The Observation and Practice-teaching lessons for each student will be arranged to represent as far as practicable the work in all forms and grades of the Lower and Middle Schools of the High Schools. There will also be Observation in the Upper School of the High School.

(*b*) So far as practicable continuous Practice-teaching for several periods will be required, the students being wholly responsible for the management of the classes.

(4) Students will be notified of the subject and scope of the Observation lesson, and should prepare the lesson beforehand. After observing the lesson they will discuss it with the teacher concerned.

(5) Students will be notified of the subject and the scope of the Practice-teaching lesson by the teacher concerned, and will prepare a plan of each Practice-teaching lesson for submission to the teacher.

(6) (*a*) Model lessons will be taught by the teachers of the Practice-schools in accordance with the regular programme of said schools.

(*b*) The instructors of the Faculty of Education will develop the details of their subjects in the teaching order, and after each suitable step, will also themselves teach model lessons in special classes and in the practice schools.

(7) (*a*) The necessary applications of the Principles of Education and Educational Psychology and of Special Methods will be made systematically in connection with the Observation lessons and the Practice-teaching; so that the course may be taken up in terms of the pupil's mind and growth. Throughout the course the instructor in the Principles of Education and Educational Psychology will himself illustrate by actual teaching the principles he has discussed in class.

(*b*) As far as practicable, the instructors of the Faculty of Education will be present at the Observation lessons and Practice-teaching of the students and will make jointly the criticism and valuation of their work.

COURSE FOR INTERIM ORDINARY HIGH SCHOOL—*Cont.*

EXAMINATIONS.

23. (1) For the purpose of determining the final standing of students the courses are classified into the following subjects:

Parts I and II: Principles of Education, Educational Psychology, School Management and Law, English, History, Mathematics, Geography, Hygiene, Latin, French, German, Greek, Science, Reading, Physical Culture, Vocal Music.

Part III: Observation, Practice-teaching.

(2) (*a*) The final standing of students in attendance will be determined by the combined results of the sessional records and the records of the final examinations in the subjects of Parts I and II, and by the result of the records of the Observation and Practice-teaching of Part III.

(*b*) The sessional records represent oral and written exercises and tests, practical work, practice in valuing the answer-papers of pupils, and such other examinations as the staff may prescribe.

(*c*) At the close of each term there will be final examinations in such courses of Parts I and II as have been completed in this term.

(*d*) At the examinations in Parts I and II, each paper will contain questions in methodology, based upon the academic subjects, which will test the candidate's academic knowledge and, if his sessional records and his answers to these questions show that his academic knowledge is defective, he will be rejected on this ground alone.

(*e*) The maximum marks assigned to each subject in Parts I and II will be 100. In all subjects except Reading, Physical Culture, and Vocal Music, a maximum of 40% of the marks will be assigned to the sessional records and 60% to the final written examinations. In Reading, Physical Culture, and Vocal Music, a maximum of 60% of the marks will be assigned to the sessional records and 40% to the final written examinations. The marks assigned to Physical Culture for the purpose of the course for Elementary certificates in Physical Culture are given on page 39.

(*f*) A maximum of 800 marks will be assigned to Practice-teaching and of 400 to Observation. The standing of the student in Observation and in Practice-teaching will be based upon his sessional records in the lessons following those which form part of the introductory courses.

CERTIFICATES.

24. (1) A student who obtains 50% of the marks in each subject of Parts I and II and 60% of the aggregate of the marks in each of the divisions of Part III, may, on the recommendation of the examiners, be awarded by the Minister of Education, an Interim Ordinary High School certificate.

(2) A student who passes in Part III and fails in not more than four subjects of Parts I and II will be exempted from further attendance.

COURSE FOR INTERIM ORDINARY HIGH SCHOOL—*Cont.*

(3) All other students who have failed to obtain the necessary final standing will be required to attend another session, beginning after the Christmas vacation.

(4) (*a*) (i) Candidates who are exempted from attendance at a Faculty of Education, as provided in (2) above, may complete their standing for a certificate by re-writing, at one annual examination, or, separately, at different annual examinations, the examination in the subject or subjects in which they failed.

(ii) Candidates who failed at an examination under former Regulations and who were exempted from subsequent attendance at a Faculty of Education will take, not later than a date determined in each case by the Minister of Education, the final examination papers as prescribed herein but their standing will be determined in the subjects as constituted under the Regulations in force when they first wrote.

(iii) Candidates who have been exempted by the Minister of Education from attendance at a Faculty of Education on account of equivalent training in other provinces or countries, and who are required to write on the final examinations of the Faculties of Education will take the prescribed final examinations in the subjects of Parts I and II, and will also satisfy the examiners by teaching and other tests that they are competent for the work in the subjects covered by the certificate for which they are candidates.

(*b*) (i) The pass standard for candidates exempt from attendance will be the same as that for candidates in attendance but no allowance will be made for sessional work, if any, in the case of candidates not in attendance.

(ii) The final examinations in Reading, Physical Culture, and Vocal Music for students exempt from attendance, will include both a practical and a written test, 40 marks being assigned to the written test and 60 to the practical test.

(*c*) (i) Candidates exempt from attendance shall take their practical tests in Part III at such times during the session as may be agreed upon with the examiners. They shall take their examinations in the subjects of Part I and II in June on dates to be determined by the examiners or, in part, in June and, in part, at such times during the session as are set apart for the examination of students in attendance.

(ii) Students exempt from attendance may take their written examinations in Parts I and II at Toronto, or at such local centres and under such conditions as may be determined by the Senate. They must, however, take their practical tests in Reading, Physical Culture, Vocal Music, and Teaching at Toronto.

COURSE FOR INTERIM ORDINARY HIGH SCHOOL—*Cont.*

(5) The conditions under which Elementary certificates in Physical Culture will be awarded are defined on p. 39.

DIPLOMAS.

25. Successful candidates who are awarded Ordinary High School certificates by the Minister of Education and such other successful candidates as may be admitted to the course under section 17 (2), p. 24, may be awarded University diplomas.

C.

COURSES FOR INTERIM FIRST CLASS GRADE A CERTIFICATES.

PURPOSE.

26. (1) (*a*). Course I for Interim First Class Grade A certificates prepares candidates therefor in the theory and art of organizing, governing, and instructing the pupils of the Public and Separate Schools, and of Grade C Continuation Schools.

(*b*) Course II for Interim First Class Grade A certificates prepares candidates therefor in the theory and art of organizing, governing, and instructing the pupils of Grade B Continuation Schools. Course II also prepares candidates for the Elementary certificate in Physical Culture.

CONDITIONS OF ADMISSION.

27. An applicant for admission to a course for an Interim First Class Grade A certificate should make application not later than September 30 to the Secretary of the Faculty of Education on a form to be obtained from him, and should submit with his application:

(*a*) His Ordinary High School or High School Specialist's certificate if he is an applicant for admission to Course I.

(*b*) His First Class Grade B or First Class certificate if he is an applicant for admission to Course II.

TEXT-BOOKS.

28. The text-books for the academic review are those prescribed for the Public, Separate, and High Schools of Ontario in each subject of the student's course.

Students should also supply themselves with the professional text-books whose titles appear in italics in the lists given below under each subject of the course. Reference books, source books, and encyclopædias to supplement these text-books are free of access in the library of the Faculty of Education.

PROGRAMME OF STUDIES.

29. Two courses of training are offered:

Course I.

Part I: School Management and Law, English, (Spelling, Literature, Composition), History, Arithmetic, Geography.

COURSES FOR INTERIM FIRST CLASS GRADE A—*Cont.*

Part II: Writing, Reading, Nature Study, Elementary Science (if not already taken), Vocal Music, Art, Manual Training, Household Science (for women).

Part III: Observation in the Kindergarten, and Observation and Practice-teaching in Forms I-IV of urban Public Schools, including the Kindergarten Primary.

Course II.

Part I: School Management and Law, English (Literature, Composition), History, Mathematics (Algebra, Geometry), Latin, any one of French, German, Greek, Science (Physics, Chemistry, Biology).

Part II: Physical Culture.

(The course in Physical Culture will supplement the course in that subject for candidates for First Class Grade B certificates at the Main Session and will lead to an Elementary certificate in the subject).

Part III: Observation and Practice-teaching in the Lower and Middle Schools of the High Schools with Observation in the Upper Schools of the High Schools.

MODIFICATIONS OF COURSES.

30. (1) Subject to the approval of the Minister of Education, the Faculty of Education may make such modifications of the scheme of subjects as will suit the conditions of candidates in Course II who obtained their academic standing in courses which did not include Latin.

(2) Students who hold Provincial professional certificates in Physical Culture, Art, Household Science, Manual Training, or Vocal Music may be exempted from the courses and examinations in said subject or subjects, but will take the Observation and Practice-teaching in the subject or subjects concerned.

(3) In the oral examinations and exercises in Vocal Music the instructor will give due consideration to the claims of the candidates who report themselves as incapable of learning to sing, provided that such claims are presented to the instructor at the beginning of the session. In no case, however, will such consideration involve exemption from attendance at the classes or from the written examinations in the subject. If any candidate is unable to teach music that fact will be stated on his certificate.

ORGANIZATION OF COURSES.

31. (1) The instruction in the special methodology of the subjects of both courses will be accompanied by a review of such subjects from the academic standpoint. This review will be limited to such portions of the courses in each subject as may be necessary to determine the scholarship of the students and to illustrate the methods of instruction in that subject, dealing in particular with those parts of the course that are difficult of presentation.

COURSE FOR INTERIM FIRST CLASS GRADE A—*Cont.*

(2) In the order and grouping of the courses in the various subjects, due regard will be had to the character of each subject and to its correlations with other subjects.

(3) The programme of instruction for each class in each course will require approximately 20 lesson-periods of 45 minutes each weekly during the session. These lesson-periods will be distributed among the various subjects of Course I approximately as follows: School Management and Law 5, English, including Reading, 45, History 5, Arithmetic 20, Geography 10, Nature Study and Elementary Science 25, Music 20, Writing 5, Art 30, Manual Training 20, Household Science (for women) 20.

In Course II they will be distributed approximately as follows: School Management and Law 10, English 35, History 10, Mathematics 30, Latin 10, Science 25, French 25, German 20, Greek 15, Physical Culture 75.

(4) The courses in Music and Physical Culture will continue throughout the session; those in the other subjects will be taken, so far as practicable, in correlation with the Observation and Practice-teaching, and will continue until completed.

(5) The Observation work will begin in the second week of the session and the Practice-teaching in the fourth week. The programme of instruction will include for each student at least 25 Observation lessons and 15 Practice-teaching lessons. These numbers will be increased to meet the needs of individual students.

OBSERVATION AND PRACTICE-TEACHING.

32. (1) So far as practicable the Observation and Practice-teaching of Course I will be subject to the same general regulations and conditions as are prescribed for the Observation and Practice-teaching of the course for the Interim First Class Grade B certificate (see p. 19).

(2) So far as practicable the Observation and Practice-teaching of Course II will be subject to the same general regulations and conditions as are prescribed for the Observation and Practice-teaching of the course for the Interim Ordinary High School certificate (see p. 26).

EXAMINATIONS.

33. (1) For the purpose of determining the final standing of students Course I is classified into the following subjects:

Part I: School Management and Law, English (Spelling, Literature, Composition), History, Arithmetic, Geography.

Part II: Writing, Reading, Nature Study and Elementary Science, Vocal Music, Art, Manual Training, Household Science (for women).

COURSES FOR INTERIM FIRST CLASS GRADE A—*Cont.*

Part III: Observation; Practice-teaching.

For the purpose of determining the final standing of students Course II is classified into the following subjects:

Part I: School Management and Law, English (Literature, Composition) History, Mathematics (Algebra, Geometry), Latin, Science (Physics, Chemistry, Biology), French, German, Greek.

Part II: Physical Culture.

Part III: Observation; Practice-teaching.

(2) (*a*) The final standing of students will be determined by the result of the records of the Observation and Practice-teaching of Part III, and by the combined results of the sessional records and the records of the final examinations in the subjects of Parts I and II.

(*b*) The sessional records represent oral and written exercises and tests, practical work, practice in valuing the answer-papers of pupils, and such examinations as the staff may prescribe.

(*c*) There will be final examinations in the subjects of Parts I and II at the completion of the course concerned.

(*d*) (*i*) The maximum marks assigned to each subject in Parts I and II will be 100. In all subjects of Part I 40% of the marks will be assigned to the sessional records and 60% of the marks to the final written examinations. In the subjects of Part II, 60% of the marks will be assigned to the sessional records and 40% to the final written examinations. The marks assigned to Physical Culture for the purpose of the course for the Elementary certificate in Physical Culture are given on page 39.

(ii) A maximum of 600 marks will be assigned to Practice-teaching and of 300 to Observation.

CERTIFICATES.

34. (1) A student who obtains 50% of the marks in each subject of Parts I and II and 60% in each of the divisions of Part III may, on the recommendation of the examiners, be granted by the Minister of Education an Interim First Class Grade A certificate.

(2) A student who passes in Part III, and fails in not more than three subjects of Parts I and II, will be exempted from further attendance at a Faculty of Education.

(3) All other students who have failed to obtain the necessary final standing will be required to attend another Supplementary Session.

CLASSES FOR INTERIM FIRST CLASS GRADE A—*Cont.*

(4) (*a*) (i) Candidates for Interim First Class Grade A certificates who are exempted from attendance at a Faculty of Education as provided in (2) above may complete their standing for a certificate by rewriting at one annual examination or, separately, at different annual examinations, the examination in the subject or subjects in which they failed.

(ii) Candidates who hold First Class Grade B certificates or First Class certificates under former Regulations, and who have taught successfully for at least three years in a Continuation School, or a Form V of a Public or Separate School of at least two teachers, as certified by the inspectors concerned and approved by the Minister, will be exempted from attendance, but will take the examinations prescribed for Part I of Course II, and must also satisfy the examiners by practical tests of their ability to teach the subjects of Grade B Continuation Schools or of the Middle School of the High Schools.

(*b*) (i) The pass standard for students exempt from attendance will be the same as that for candidates in attendance but, in the case of candidates not in attendance, no allowance will be made for sessional work, if any, in any subject and no examinations will be held in Physical Culture.

(ii) The final examinations in Music for students exempt from attendance will include a practical test to which 60% of the marks for the subject will be assigned, and also a written test.

(*c*) (i) Candidates exempt from attendance will take their examinations in December on dates to be determined by the examiners, or in part, in December and, in part, at such times during the session as are set apart for the examination of candidates in attendance.

(ii) Candidates exempt from attendance may take their written examinations at Toronto or at such local centres and under such conditions as may be determined by the Senate. They must, however, take their practical tests at Toronto.

(5) The conditions under which Elementary certificates in Physical Culture will be awarded are defined on pages 38, 39.

D.
COURSES FOR HIGH SCHOOL SPECIALISTS' CERTIFICATES.

PURPOSE.

35. The courses for Interim High School Specialists' certificates prepare candidates therefor in the theory and art of organizing and instructing the pupils of the Lower, Middle, and Upper Schools of the High Schools and Collegiate Institutes, in certain departments or subjects of the course of said Lower, Middle, and Upper Schools.

CONDITIONS OF ADMISSION.

36. (1) Applicants for admission to the courses for Interim High School Specialists' certificates, or to the final examinations for said certificates, must also be applicants for admission to the courses for Interim Ordinary High School certificates, or must be applicants for admission to the examinations therefor without attendance throughout the session, or must already hold Ordinary High School certificates. No candidate will be awarded an Interim High School Specialists' certificate or receive credit towards said certificate *before* he has been awarded an Interim Ordinary High School certificate.

(2) (*a*) A candidate for an Interim High School Specialist's certificate who is also a candidate for admission to the course for an Interim Ordinary High School certificate, must comply with the conditions for admission prescribed for candidates for Interim Ordinary High School certificates, and must also have his academic standing as a specialist approved by the Minister of Education before he will be admitted to said specialist course or to the examinations for the specialist certificate.

(*b*) A candidate for an Interim High School Specialist's certificate, who holds an Ordinary High School certificate, must have his academic standing as a specialist approved by the Minister of Education before he will be admitted to the examinations for the specialist certificate.

COURSES.

37. (1) Courses will be offered for Interim High School Specialists' certificates in Classics, English and History, Moderns and History, French and German, Mathematics, Mathematics and Physics, Science, and Household Science.

(2) Each specialist course will consist of at least two seminar-periods per week throughout the session, and of special Observation and Practice-teaching in the specialist department in which the candidate is an applicant for a certificate.

COURSES FOR HIGH SCHOOL SPECIALISTS—*Cont.*

TEXT-BOOKS.

38. Students in the courses for High School Specialists' certificates will supply themselves with such special professional text-books as may be recommended by the instructors from the lists given under the details of each course. The other books and journals, whose names appear in these lists, may be consulted in the library of the Faculty of Education.

EXAMINATIONS.

Subjects and Standards.

39. (1) Subject to the condition that no student may be awarded an Interim High School Specialist's certificate who does not already hold or is not also awarded an Interim Ordinary High School certificate, the final standing of students in attendance in a specialist course will be determined by the records of the Observation and Practice-teaching in the department or subject concerned, and by the combined results of the sessional records and the records of the final examinations in the same department or subject. The sessional records represent oral and written exercises and tests, practical work, practice in valuing the answer-papers of pupils and such term work as the instructors may prescribe. The records of the final examinations will be based upon two examination papers taken in each department at the close of the Main session. The maximum marks represented in the Observation and Practice-teaching will be 100; in the sessional records 40; and in the final written examinations of the department or subject 60.

(2) The final standing of students not in attendance will be determined by the final written examinations and by teaching in the department concerned. For this purpose the maximum of marks in each case will be 100.

CERTIFICATES.

40. (1) On the recommendation of the examiners the Minister of Education may grant Interim High School Specialists' certificates to students in attendance who have fulfilled the conditions of the course for Interim Ordinary High School certificates, who have obtained 60% of the aggregate of marks represented in the sessional records and the records of the final examinations and who have obtained 60% of the marks assigned to the Observation and the Practice-teaching, respectively, in the specialist department.

(2) On the recommendation of the examiners the Minister of Education may grant Interim High School Specialists' certificates to students exempt from attendance who hold or are awarded Ordinary High School certificates, who hold also the necessary academic certificates as

COURSES FOR HIGH SCHOOL SPECIALISTS—*Cont.*

specialists, and who obtain 60% of the marks assigned to the written examinations and to the Practice-teaching, respectively, in the specialist course concerned.

(3) (*a*) For students not in attendance the written examinations in the courses for Interim High School Specialists' certificates will be held at the end of the Main session at Toronto or at such local centres and under such conditions as may be determined by the Senate.

(*b*) For students not in attendance the practical examinations will be held at Toronto, except in the case of those to whose competency the visiting High or Continuation School Inspector certifies, after due notification to such Inspector of the candidate's intention to become an applicant for a specialist's certificate.

E.

COURSE FOR ELEMENTARY CERTIFICATE IN PHYSICAL CULTURE.

PURPOSE.

41. The course for the Elementary certificate in Physical Culture prepares candidates therefor in the theory and art of organizing, governing, and instructing in Physical Culture the pupils of Continuation and High Schools.

CONDITIONS OF ADMISSION.

42. (1) Students who have been admitted to the course for Interim Ordinary High School certificates will take also the course for the Elementary certificate in Physical Culture.

(2) Students who hold First Class Grade B certificates or First Class certificates under former regulations and who have been admitted to the Supplementary course for First Class Grade A certificates will take also the course for the Elementary certificate in Physical Culture.

SESSION.

43. (1) For students in the course for Interim Ordinary High School certificates the course for Elementary certificates in Physical Culture continues throughout the Main session.

(2) For students in Course II of the courses for Interim First Class Grade A certificates the course for Elementary certificates in Physical Culture will continue throughout the Supplementary session.

TEXT-BOOKS.

44. Students in the course for Elementary certificates in Physical Culture will supply themselves with such text-books as may be recommended by the instructors from the list given under the details of that subject.

PROGRAMME OF STUDIES.

45. The details of the contents of the course for Elementary certificates in Physical Culture are to be found on pages 66 and 67.

EXAMINATIONS.

46. (1) The final standing of candidates for the Elementary certificate in Physical Culture will be determined by the results of the sessional work, final practical tests, and final written examinations.

COURSE FOR ELEMENTARY CERTIFICATE IN PHYSICAL CULTURE.

(2) The following is the scheme of examinations and tests:

Written Examinations:

Anatomy 100, Physiology and First Aid 100.

Sessional and Final Practical Tests:

FOR WOMEN: Calisthenics 200, Apparatus 50, Games and Military Drill 200, Swimming 50.

FOR MEN: Calisthenics 100, Apparatus 200, Indoor Games and Athletics 50, Swimming 50.

Forty per cent. of the marks in each of the practical examinations will be assigned to the sessional and sixty per cent. to the final tests.

CERTIFICATES.

47. (1) On the recommendation of the examiners the Minister of Education may grant an Elementary certificate in Physical Culture to the student in the course for an Interim Ordinary High School certificate or the course for an Interim First Class Grade A certificate (Course II) provided that said student is awarded an Interim Ordinary High School or Interim First Class Grade A certificate and obtains in Physical Culture a minimum of 40% of the marks for each subject, and 60% of the aggregate of marks assigned to (i) the written and (ii) sessional and final practical tests, respectively.

(2) (*a*) No student will be awarded an Elementary certificate in Physical Culture whose attendance or progress in any part of the course has been reported as unsatisfactory.

(*b*) Elementary certificates in Physical Culture will not be granted to candidates who are not also in regular attendance in the courses for Interim Ordinary High Schools or Interim First Class Grade A (Course II) certificates.

(*c*) The Dean will investigate the claims of the candidates who report themselves as unable for physical reasons to take the course in swimming, provided that such claims are presented to the instructor at the beginning of the session on a form and after a manner defined by the Minister of Education. If any candidate is exempted from the instruction in swimming by the Minister of Education that fact will be stated in his certificate.

(3) On the recommendation of the examiners the Minister of Education may award Elementary certificates in Physical Culture to the students in Course II for Interim First Class Grade A certificates who fail in said course but who pass in the course for Elementary certificates in Physical Culture.

DETAILS OF COURSES.

FOR FIRST CLASS GRADE B, ORDINARY HIGH SCHOOL, FIRST CLASS GRADE A, HIGH SCHOOL SPECIALISTS' CERTIFICATES, AND ELEMENTARY CERTIFICATES IN PHYSICAL CULTURE.

48. (1) The details given below include a statement of the contents of each of the subjects of the courses for Interim First Class Grade B, Ordinary High School, First Class Grade A, and High School Specialists' certificates, and Elementary certificates in Physical Culture. (2) The lists given below contain the names of books available for reference in the library of the Faculty of Education. From time to time the instructors will give directions as to the use of these reference books. All candidates for Interim First Class Grade B, First Class Grade A, and Ordinary High School certificates, however, should supply themselves with copies of the books whose titles appear in italics. In certain cases where the book in italics is limited in the main to the work of primary education, candidates for Interim Ordinary High School and Interim First Class Grade A certificates will be recommended to supply themselves with additional or special books. The instructors concerned will make known the text-books to be used in the courses for Interim Specialists' certificates and Elementary certificates in Physical Culture.

THE PRINCIPLES OF EDUCATION.

49. (1) Candidates for Interim First Class Grade B and Ordinary High School certificates will take the course outlined below; the course for the former certificate will emphasize those topics that relate specially to Elementary Schools and that for the latter, to the Secondary Schools.

(2) The following are the main topics of the course:

Introduction.—Democracy and education; the special need for education in a democracy; teaching as a vocation; teacher-training in a modern educational system.

General Method.—The meaning of method and its psychological foundations; procedures common to various branches of teaching; types of lessons; notes of lessons.

Principles of Education.—The nature and aims of education; the function in education of the state, home, church, vocation, etc.; the curriculum, its nature, purpose, and selection; modern movements for the reform of education.

Educational Classics.—The study in class of selected portions of the following: Plato, Republic, Books I-IV; Quintilian, De Oratore; Vergerius, De Ingenuis Moribus; Milton, Tractate on Education; Locke, Some Thoughts concerning Education; Rousseau, Emile; Pestalozzi, How Gertrude Teaches Her Children; Herbart, The Science of Education; Froebel, The Education of Man; Spencer, Education—Intellectual, Moral and Physical; Dewey, Democracy and Education.

DETAILS OF COURSES

Books of Reference:

Ontario Normal School Manuals: Science of Education, History of Education.

Raymont: Principles of Education.

Ruediger: Principles of Education.

Adams (Ed.): The New Teaching.

Welton: What Do We Mean by Education?

EDUCATIONAL PSYCHOLOGY.

50. (1) Candidates for Interim First Class Grade B and Ordinary High School certificates will take the course outlined below; the course for the former certificate will emphasize those topics that relate especially to Elementary Schools and that for the latter, to the Secondary Schools.

(2) The following will form in the main the subject-matter of the course:

The original nature of man, including a study of heredity, instinct, and capacities.

The Psychology of the learning process, including the study of such topics as habit, rates of learning, practice, fatigue, memory, reasoning.

The Psychology of typical elementary and high school branches; standard scales for their measurement.

The measurement of general intelligence; an examination of the Binet-Simon and other tests.

Child Study, its aims, methods, and results.

Books of Reference:

Ontario Normal School Manual: Science of Education.

James: Talks to Teachers on Psychology.

Judd: Psychology.

Kirkpatrick: Fundamentals of Child Study.

McDougall: Psychology.

Pintner and Paterson: A Scale of Performance Tests.

Sandiford: Mental and Physical Life of School Children.

Terman: The Measurement of Intelligence.

Thorndike: Education, A First Book.

SCHOOL MANAGEMENT AND LAW.

51. (1) Candidates for First Class Grade B certificates will take sections A and B. In this case the discussion of the topics in section B will have reference to Public and Separate, and Grade C Continuation Schools.

Candidates for Ordinary High School certificates will take sections A and B. In this case the discussion of the topics in section B will have reference to High and Continuation Schools.

For both classes of students the discussion of the topics in section A will be historical in character and brief.

DETAILS OF COURSES.

Candidates for First Class Grade A certificates will take section B. In this case the instruction in section B will have reference to the types of schools represented in the course in which the candidates are registered.

(2) The following are the main topics of the course:

A. School Management, School Organization, School Administration; aims and scope of each; relation of each to the teaching process.

Forms of educational control; Department of Education and its functions; school boards and their functions; relation of inspectors and principals to teachers; teachers to caretakers, trustees; finance of education; business administration.

Types of schools; functions of each type, primary, secondary, and higher schools; consolidated schools; day and evening schools; training schools; commercial, industrial, agricultural, and technical schools; schools for subnormal children, defectives, and delinquents.

B. School sites and surroundings; school buildings; construction, caretaking, heating, ventilation, lighting, sanitation, decoration, and equipment; apparatus; libraries, selection, cataloguing, use; text-books, authorization, use and abuse; free text-books; visual aids; medical and dental inspection.

The teacher: characteristics, qualifications, appointment, tenure of office, promotion, improvement of status; superannuation of the teacher; duties of the teacher in relation to pupils, parents, and other citizens; qualifications and characteristics of the successful teacher; his code of ethics.

The pupil: privileges and duties; the health of the pupil; the formation of his habits; the teacher's responsibility; fatigue; moral training.

The first day in school; the importance of the teacher's work and attitude.

Organization: grading and classification; promotion; retardation; elimination; care of individual and of abnormal.

The recitation: assignment of home and seat work; oral and written exercises; how to study; questioning; treatment of answers.

Discipline: its scope; relation to methods of teaching; incentives; causes of disorder and inattention; methods of dealing with weaknesses and offences; penalties.

Time-tables: purpose; principles involved in construction; typical daily programmes for various kinds of schools.

Records and reports: keeping registers; value and kinds of school records; forms of reports.

Examinations and other tests of progress.

School Law and Regulations in so far as they refer to the duties of school boards, teachers, and pupils. This will be understood to include in addition the following: Public School Act, sects. 6, 7, 8, 9, 49-54, 59, 63, 66, 70-88, 101, 113, 116; Department of Education Act, sect. 28; Instructions 12, 13.

DETAILS OF COURSES.

Books of Reference:

Regulations and Courses of Study for the Public, High and Continuation Schools of Ontario.

Ontario Schools Acts, and Public Health Act.

Ontario Normal School Manuals: School Organization and Management, History of Education.

Bagley: Class Management.

Landon: Principles and Practice of Teaching and School Management.

White: School Management.

DETAILS OF COURSES.

SPECIAL METHODS.

52. Having due regard to the certificate for which each student may be a candidate, the courses in Special Methods are intended to prepare him for his observation and practice-teaching in the various practice-schools of the Faculty of Education and for his subsequent teaching in the schools of Ontario, by leading him to adjust his work in each subject to the principles of General Method. To this end each course in Special Method will be introduced by a few lectures on the application of the principles of General Method to the teaching of the special subject. The lectures which follow will deal with the topics that appear under each subject below, and in particular with the selection and organization of the subject-matter of said subject for the various Public and Separate, Continuation, or High School forms and grades, as the case may be. In the illustration of the methodology those topics of the school courses which are most difficult of presentation will be emphasized. The principle of the correlation of studies will be one of the most important topics in each of the courses in methods. The lecturers will have always in view the provisions of the Ontario Public and Separate, Continuation, and High School courses of study.

READING.

53. (1) Candidates for Interim First Class Grade B certificates will take sections A, B, C, and D; candidates for Interim First Class Grade A certificates (Course I) will take section B; candidates for Interim Ordinary High School certificates will take sections A, C and D.

(2) The following are the main topics of the course:

A. Introductory: The importance of training in reading and in the principles of vocal expression to the pupil's ordinary speech and general culture; a brief synopsis of the history of reading; the problems of reading as exemplified through present-day investigations.

DETAILS OF COURSES.

B. The Reading Process: The factors involved in the process; the work of the eye in reading; word-recognition; the reading process as a specialized mode of the thought process; the relation of ideas to symbols; constant necessity for associating the printed symbol directly with the idea; the ideal conditions for the formation of this association.

The problem of primary reading; the various methods of teaching beginners to read; merits and defects of each; the combination method as outlined in the primary reading manual; devices for securing rapid word-recognition and for fixing attention upon the thought and feeling as well as upon word forms.

C. The nature and function of silent reading; methods of conducting lessons in silent reading; the basis of expressive reading; the principles of vocal expression; the criticism of the pupil's reading; the place and limitations of imitative reading.

D. Practice; voice training; a class course in expressive reading; this work to be supplemented by practice in connection with the course in literature and with the activities of the Literary Society and the Dramatic Club.

Tests: Reading tests, *e.g.*, "The Courtis Standard Test in Reading".

Books of Reference:

Public School Manual: Primary Reading.
Ontario High School Reader.
Huey: Psychology and Pedagogy of Reading.

LITERATURE.

54. (1) Candidates for Interim First Class Grade B certificates will take section A, and section B as far as applicable to Lower School work; candidates for Interim First Class Grade A certificates (Course I) will take section A; candidates for Interim First Class Grade A certificates (Course II) will take section C; candidates for Interim Ordinary High School certificates will take section B.

(2) The following are the main topics of the course:

A. The standards of good literature; the selection of subject matter; the extensive and intensive study of literature; the importance and the method of memorizing selections; the methods of using the *Golden Rule Books*.

Lesson Procedure: Preparation of the pupils; necessity for preparing a suitable mood for the lesson; how far the author's biography and the experience of the pupils have a place here; preliminary reading of the selection; the main thought of the lesson grasped and the main feeling of the lesson impressed through a reading of it; the analysis of a selection into its wider thought elements and feeling elements, and the analysis of these again into their elements; the place of explanation of words and

DETAILS OF COURSES.

phrases; final synthesis; final reading of the selection; the necessity for some form of self-expression; common faults on the part of both pupil and teacher and their correction; criticism by teacher and pupils.

Examinations: Difficulties of examining in literature; specimen examination questions and discussion of their suitability.

B. The standards of good literature; its value in the High School course; the principles followed in Ontario and elsewhere in arranging literature courses for Continuation and High Schools; books suitable for intensive study in the various forms or grades of the Lower and Middle School; class treatment of such types of literature as the short poem, the long narrative poem, the play, the short story, and the novel; High School examinations in literature; supplementary reading in the High School, its importance, selection of books, testing of reading.

C. A review of the course outlined in Section B with special reference to the teaching of literature in the Middle School.

(3) The course in literature includes practical work in Reading.

Books of Reference.

Public School Manuals: Literature, The Golden Rule Books.
MacClintock: Literature in the Elementary School.
Arlo Bates: Talks on the Teaching of Literature.
Bolenius: Teaching Literature in the Grammar Grades and the High School.
Carpenter, Baker, and Scott: The Teaching of English.
Chubb: The Teaching of English.

GRAMMAR.

55. (1) Candidates for Interim First Class Grade B certificates will take sections A, B, and C; candidates for Interim Ordinary High School certificates will take sections A and C.

(2) The following are the main topics of the course:

A. Introductory: The meaning of English grammar; its relation to speech; reasons for and against retaining it in elementary schools; reasons for deferring the formal study till Form IV; introductory work of Form III in connection with composition.

B. Stages and Methods: The sentence; value of function; the parts of speech; their classification; inflection, use and value of the remaining inflections, substitutes for inflection; rules of syntax, their value; treatment of false syntax; use of grammatical terminology; definitions, their value, how to be applied; analysis and parsing; aim and value of elementary etymology, the derivation and composition of words. Methods of dealing with the above topics in the first presentation and in review on Forms IV-V of the Public School and in Grade C Continuation Schools.

DETAILS OF COURSES.

C. Consideration of the content and value of the course in grammar in Continuation and High Schools: The work to be covered in each of the Forms of the Lower School; use of a text-book in grammar; advantages and limitations of the inductive method in teaching grammar in Continuation and High Schools; methods of conducting instruction in grammar discussed and illustrated in lessons upon subjects selected from topics difficult of presentation.

Books of Reference:

Public School Manual: Grammar.
Carpenter, Baker and Scott: The Teaching of English.
Chubb: The Teaching of English.

COMPOSITION.

56. (1) Candidates for Interim First Class Grade B certificates will take sections A, B, and also C as far as it refers to Lower School work; candidates for Interim First Class Grade A certificates (Course I) will take section B; candidates for Interim First Class Grade A certificates (Course II) will take section D; candidates for Interim Ordinary High School certificates will take sections A, C, and B so far as applicable to High School work.

(2) The following are the main topics of the course:

A. Introductory: The value of language training; the constructive and the interpretative phases of the study of English; present-day tendencies in the teaching of composition.

B. Methods: How habits of speaking and writing good English are formed; expression as a stage in the development of every lesson; the forms of expression that aid most the development of language powers; the effect of the teacher's example upon the pupils' language; relative value of reading and telling stories; the story method; value of reading and memorizing good literature; incidental work in language training.

The relation of oral and written composition; purpose and value of oral exercises; criticism of oral work, the dangers connected therewith and the means of avoiding them.

The principles to be kept in view in conducting exercises in written composition; the method of gathering, selecting, and arranging material; value of topical outlines; supervision and aid during writing; the place of home work in written composition; the value of formal linguistic exercises; correction of common errors; letter-writing and business-forms.

The mechanics of written composition: Sentence and paragraph structure; paragraph compositions; the use of capitals, punctuation marks, quotation marks, abbreviations, etc.

C. The principles to be followed in arranging a High School course in composition; work suited to the age and experience of the student; use of a text-book in composition; amount of written work to be demanded;

DETAILS OF COURSES.

criticism of essays; standards of marking; place of rhetoric in the High School course; importance of oral composition; sources of material; class procedure.

D. A review of the course outlined in section C with special reference to the teaching of composition in the Middle School of the High School.

Books of Reference:

Public School Manual: Composition and Spelling.
Carpenter, Baker and Scott: The Teaching of English.
Chubb: The Teaching of English.

SPELLING

57. (1) Candidates for First Class Grade B and First Class Grade A (Course I) certificates will take the course in Spelling.

(2) The following are the main topics of the course:

Introductory: The problem of spelling; a brief historical study of spelling to note (*a*) its varying relationships to the other subjects of the curriculum, (*b*) the changes in content, and (*c*) the improvement in method; a summary of the reports of recent investigations in the subject of spelling.

Materials: General principles of selection of material for spelling; different bases for grouping words for the purpose of spelling; mumber of words per lesson; the place and relative value of other subjects; the spelling book, grade lists, class lists, and individual lists in providing material for the spelling lesson.

Lesson Procedure: Assignment; necessity for the close association of meaning, pronunication, and form in spelling; how the meaning of the word should be developed; various devices for impressing the form of the word, *e.g.*, visualization, oral spelling, transcription, syllabication, word-building, word-grouping, etc.

Tests: Relative merits and defects of the oral and the written tests.

Detection of errors: Relative merits and defects of the following means: by teacher, self-detection, by monitors, one pupil examines the work of another pupil.

Correction of errors; causes of incorrect spelling; the common types of error; prevention *versus* correction; methods of correcting errors.

The use of dictionaries.

Spelling tests, *e.g.*, The Courtis Standard Test in Spelling.

Practical exercises in Spelling.

Books of Reference:

Public School Manual: Composition and Spelling.
Suzzallo: The Teaching of Spelling.
Annandale: The Concise Imperial Dictionary.

HISTORY.

58. (1) Candidates for Interim First Class Grade B certificates will take section A, and Section B as far as it refers to Lower School work; candidates for Interim First Class Grade A certificates (Course I) will take Section A; candidates for Interim First Class Grade A certificates (Course II) will take section C; candidates for Interim Ordinary High School certificates will take Section B.

(2) The following are the main topics of the course:

A. Introductory: The scope of history; the special value of Canadian and British history; the proper perspective in the development of the subject; what makes an event important.

Stages and Methods: The picture and story stage; the information stage, an introduction to history proper with emphasis on biographical and social aspects; the reflective stage; the study of causal relations and of the origin, development, and inner life of institutions.

The recitation, its forms and purpose; the place of oral teaching and of blackboard work by teacher, and of written exercises at seat and at blackboard by pupils; oral and written work; use of pictures, maps, readers, source books, text-books, and current journals and periodicals.

The selection and arrangement of material suitable for different grades; the place and purpose of each of the following:

History of aborigines; current history; history of pioneers; local history.

Characteristics of peoples.

Biography: Selection of suitable biographies for pupils of different grades.

Epochs: Systematic chronological study of history.

Civics.

Supplementary material: Significance and value of the flag. The causes and significance of the great war.

Illustration of the methods of conducting instruction in history in lessons on topics selected from British and Canadian history as prescribed for the Public Schools and Grade C Continuation Schools.

B. Stages in the study of history; the reflective stage; the tools of the history teacher; the High School course in history and civics; importance, content, methods of teaching. Illustration of methods in lessons on topics selected from the history prescribed for the Lower and Middle Schools. Students will be required to show their ability to gather historical material, and to present it in acceptable forms.

C. A review of the course outlined in Section B with special reference to the teaching of Middle School history.

Books of Reference:

Public School Manual: History.
Bourne: The Teaching of History and Civics.
Johnson: The Teaching of History.
Macpherson: Visual Aids in the Teaching of History.
The Committee of Seven: The Study of History in Schools.

DETAILS OF COURSES.

SEMINAR IN ENGLISH AND HISTORY.

59. (1) In addition to the courses in English and History for Interim Ordinary High School certificates, students in attendance who are candidates for Interim High School Specialists' certificates in English and History or in Moderns and History will take the seminar in English and History.

(2) The following are the main topics for discussion in the seminar:

ENGLISH:

(*a*) A study of topics difficult of presentation in the English grammar, composition, and literature prescribed in the High School courses of study.

(*b*) A discussion of the organization of the course in English throughout the various Forms of the High School.

(*c*) A study of the methods of class-room procedure in the teaching of English, and of problems arising therefrom.

Books of Reference:

Bolenius: Teaching Literature in the Grammar Grades and High Schools.

Carpenter, Baker and Scott: The Teaching of English.

Chubb: The Teaching of English.

Hosic: Reorganization of English in Secondary Schools (Bulletin No. 2, 1917, Bureau of Education).

Articles in "The English Journal".

HISTORY:

(*a*) A study of topics difficult of presentation in the prescribed history.

(*b*) A discussion of the courses in history that are adapted for pupils of various ages, and of the corresponding methods of teaching.

(*c*) A study of the method of research in history. The preparation of short monographs on assigned topics.

Books of Reference:

Allen: The Place of History in Education.

Johnson: The Teaching of History.

Keatinge: Studies in the Teaching of History.

Langlois and Seignobos: Introduction to the Study of History.

Dunn: Social Studies in Secondary Education (Bulletin No. 26, 1916, Bureau of Education).

Articles in "The History Teachers' Magazine".

ARITHMETIC.

60. (1) Candidates for Interim First Class Grade B certificates will take Sections A, B, C, and D; candidates for Interim Ordinary High School certificates will take sections C and D; candidates for Interim First Class Grade A (Course I) certificates will take Sections A and B.

DETAILS OF COURSES.

(2) The following are the main topics of the course:

A. Introductory: A brief study of present-day movements in Arithmetic: the fundamental changes in the purpose and method of teaching arithmetic; the content selected for teaching; and the relation of arithmetic to the life of the child.

The origin of number ; the various steps involved in the development of the number idea; the unit, its nature and use; the necessity for standard units; number, a ratio.

B. Methods: Analysis and synthesis, induction and deduction, illustrated and applied; the use of concrete material and apparatus; use of graphic methods; drill and devices to secure neatness, accuracy and rapidity of computation; importance, place, and treatment of mental arithmetic. Checking and verifying of results in arithmetic.

The value of problems; selection of problems; interest in problems for which the pupils themselves furnish the materials; where and how to assist pupils; type solutions; the unitary method, its merits and limitations; solutions by full analysis and by performing only necessary operations.

The various arithmetical operations and their application, with special stress upon the methodology of the elementary work.

Counting, addition, subtraction, multiplication, division; use of tables; order of exercises; tests.

Tests: Arithmetic tests, *e.g.*, the Courtis Standard Test in Arithmetic.

C. Fractions: (*a*) vulgar, different interpretations; numeration and notation; operations; conditions under which these operations can be performed; measures and multiples; (*b*) decimal; as special fractions and as complements of common notation; correspondence of methods with those of integers. Approximations.

Compound rules; tables of weights and measures; reduction; operations.

The metric system, when and how it should be taught.

D. Square root by factoring and by the formal method, illustrated geometrically and algebraically.

Commercial arithmetic: how to make topics like discount, stocks, exchange, etc., concrete to the pupil; use of tables in calculating interest, discount, taxes, etc.; commercial and business forms.

Mensuration; the application of arithmetic to space relations; theoretical and practical methods of obtaining formulae; practical problems to show the use of these formulae; the necessity of models in teaching mensuration.

Books of Reference:

Public School Manual: Arithmetic.
McMurry: Special Method in Arithmetic.
Schultze: The Teaching of Secondary Mathematics.
Smith: The Teaching of Elementary Mathematics.
Suzzallo: The Teaching of Primary Arithmetic.
Young: The Teaching of Mathematics.

DETAILS OF COURSES.

ALGEBRA.

61. (1) Candidates for Interim First Class Grade B certificates will take Section A; candidates for Interim Ordinary High School certificates will take Sections A and B; candidates for Interim First Class Grade A (Course II) certificates will take Section B.

(2) The following are the main topics of the course:

A. Arithmetical algebra; transition from arithmetic to algebra; generalization of language and of method; the introduction and defining of symbols; the negative quantity; the simple rules; the distributive law, commutative law, index law, sign rule; the equation and its place in algebra; factoring; highest common factor and lowest common multiple; use of detached co-efficients; classes of simple equations; symmetry and its applications in elementary algebra; square root; method of dealing with problems and the object to be kept in view in their solution; verifying and checking results; correlation of algebra and geometry; graphical methods of illustrating formulae and of interpreting the roots of equations.

B. The theory of fractional and negative indices; surds and surd equations; quadratic equations of one and two unknowns; theory of quadratics; simple ratio and proportion.

Books of Reference:

Schultze: The Teaching of Secondary Mathematics.
Smith: The Teaching of Elementary Mathematics.
Young: The Teaching of Mathematics.

GEOMETRY.

62. (1) Candidates for Interim First Class Grade B certificates will take Section A; candidates for Interim Ordinary High School certificates will take Sections A and B; candidates for Interim First Class Grade A (Course II) certificates will take section B.

(2) The following are the main topics of the course:

A. Practical geometry to precede the theoretical; use of instruments; paper folding; necessity for accuracy; distinction between practical geometry and geometrical drawing; practical problems in the solution of triangles and in measuring heights and distances; limitations of appeals to the concrete; value of experimental proofs; need of clear and definite conceptions of the fundamental truths; the place of the definitions and axioms; when and how they should be introduced; the proposition; home-work and class-work; the analytic-synthetic method of dealing with propositions and deductions; the comparative values of propositions and deductions; the comparative values of propositions and exercises; how to get pupils to work original exercises; necessity of original work from the beginning of theoretical geometry; the indirect method of demonstration;

methods of class teaching; importance of note-books for pupils' exercises; the grouping and relating of propositions; practical applications; algebraic solutions; Euclid's method compared with modern methods; method of teaching the more important propositions and exercises in Book I of the authorized text.

B. The method of dealing with the more important propositions and exercises in the remainder of the authorized text.

Books of Reference:

Schultze: The Teaching of Secondary Mathematics.
Smith: The Teaching of Elementary Mathematics.
Young: The Teaching of Mathematics.

SEMINAR IN MATHEMATICS.

63. (1) In addition to the courses in Mathematics prescribed for the Interim Ordinary High School certificate, the student who is a candidate for an Interim High School Specialist's certificate in Mathematics will take the seminar in Mathematics as defined below, and the student who is a candidate for an Interim High School Specialist's certificate in Mathematics and Physics will take the seminar in Mathematics, together with such portions of the seminar in Science as the instructors therein may direct.

(2) The seminar in Mathematics will discuss methods in Trigonometry and the more advanced parts of Algebra and Geometry; the order of presenting the parts of these subjects so as to secure the most logical and impressive relation among the parts; the relations of the subjects themselves; the place of the teacher in dealing with more mature minds; the history and development of such special topics as the algebraic equation, the vulgar and decimal fraction, loci, maxima and minima, theory of parallel lines, etc.; examinations in mathematics, their purpose, when they should be held, the character of the paper, methods of marking, etc.

Books of Reference:

Howell: A Foundation Study in the Pedagogy of Arithmetic.
Fink: A Brief History of Mathematics.
Schultze: The Teaching of Secondary Mathematics.
Smith: The Teaching of Elementary Mathematics.
Young: The Teaching of Mathematics.
Articles in "School Science and Mathematics".

GEOGRAPHY.

64. (1) Candidates for Interim First Class Grade B certificates will take Sections A, B, C, D and E; candidates for Interim Ordinary High School certificates will take sections A, C, D and E; candidates for Interim Grade A (Course I) certificates will take section B.

DETAILS OF COURSES.

(2) The following are the main topics of the course:

A. Scope and Method of Geography: Relationship to other subjects of the courses of study; general methods of presentation with advantages and disadvantages of each method.

B. Elementary Geography: Method of treatment; home geography; observation work; excursions for the study of local geography; definitions.

C. Regional geography: Maps; different kinds, importance of each; map drawing; use of pictures, globes and other visual aids; use of text-books, readers, reference books; methods of treatment of typical regions.

D. Commercial Geography: Factors determining commerce; chief commercial commodities; geographical factors determining their production and distribution; relation of physical features to commerce; commercial geography of selected regions; methods of treatment of typical problems.

E. Physical Geography: Relation of physical to commercial and regional geography; importance of experimental work; use of such aids as contour, isobar, isotherm, and weather maps; interpretation of the physical geography of Ontario. A discussion of the method of treatment of topics difficult of presentation from the physical geography prescribed for the High Schools of Ontario.

Books of Reference:

Public School Manual: Geography.
Wallis: The Teaching of Geography.
Chisholm: Handbook of Commercial Geography.
Lake: Physical Geography.
Andrew: A Text-book of Geography.

NATURE STUDY.

65. (1) Candidates for Interim First Class Grade B and Interim First Class Grade A (Course I) certificates will take Sections A, B and C.

(2) The following are the main topics of the course:

A. The scope of nature study; relation to other subjects of the course of study for Public Schools; various aims; relation of nature study to rural life; books on nature study.

B. Material of nature study; distribution of time between formal lessons and observational work; methods of conducting observational work; records of periodical natural phenomena; collections, excursions, aquaria, vivaria; use of books, charts, pictures, museum specimens, etc., school museum.

C. The methods of conducting instruction in Nature Study discussed and illustrated in lessons on topics difficult of presentation.

Books of Reference:

Public School Manual: Nature Study.
Bailey: The Nature Study Idea.
Comstock: Handbook of Nature Study.

DETAILS OF COURSES.

ELEMENTARY SCIENCE.

66. (1) Candidates for Interim First Class Grade A (Course I) and Grade B certificates will take this course.

(2) The course in Elementary Science is an extension of the course in Nature Study into more formal work in Science and a preparation for the still more formal work in the Physics and Chemistry of the Middle School course and the Biology of the Upper School course.

(3) The following are the main topics of the course:

Scope and value of the natural sciences; meaning of science and scientific method; educational value of science; inductive and deductive methods of investigation.

Experimental work; how conducted, how recorded; manipulation of apparatus; glass-working; making of simple apparatus; classroom discussion, its purpose, method, and relation to the experimental work; the use of text-books; note-books, method of inspection, drawing; reference books, most suitable books in each subject for the library; supplementary reading; methods in biology, physics, and chemistry of the Lower School, illustrated in lessons upon subjects difficult of presentation.

Books of Reference:

High School Manual: Suggestions for Teachers of Science.
Burlend: First Course in Zoology.
Woodhead: The Study of Plants.
Gregory and Simmons: Lessons in Science.

SCIENCE.

67. (1) Candidates for Ordinary High School certificates will take Sections A and B; candidates for Interim First Class Grade A certificates (Course II) will take Section B.

(2) The following are the main topics of the course:

A. The course in Elementary Science prescribed under that heading.

B. Laboratory equipment for the teaching of Elementary Science, and of Physics, Chemistry, and Biology; methods of demonstration; use of technical terms; theories, facts, scientific laws; text-books and reference books.

Chemistry: Order of treatment; introductory work. Methods of conducting instruction in Chemistry will be discussed, and illustrated in lessons upon subjects selected from such topics as the following: chemical laws and theories; valency; formulae and equations; nomenclature; qualitative and quantitative experiments; chemical arithmetic; the elements, with sodium and chlorine as types.

DETAILS OF COURSES.

Physics: Methods of conducting instruction in the more difficult parts of the courses in heat, light, sound, magnetism, electricity, and mechanics will be discussed and illustrated in lessons upon subjects selected from such topics as the following: specific gravity, properties of liquids and gases, machines, temperature, specific heat, laws of reflection, images in mirrors and lenses, laws of vibrating strings with problems, interference of sounds, lines of magnetic force, relation between statical and current electricity, practical applications of electricity.

Biology: Dissection; experiments with plants; the microscope; aquaria and terraria; school museums; plant and animal ecology. Methods of conducting instruction in biology will be discussed and illustrated in lessons upon subjects selected from such topics as the following: relation of structure to function, animal and plant types as the grasshopper, frog, hepatica, fern. This discussion will assume a practical acquaintance on the part of the student with the common plants and animals of Ontario.

Books of Reference:

High School Manual: Suggestions for Teachers of Science.
Twiss: Principles of Science Teaching.
Lloyd and Bigelow: The Teaching of Biology.
Smith and Hall: The Teaching of Chemistry and Physics.

SEMINAR IN SCIENCE.

68. (1) In addition to the course in Science prescribed for Interim Ordinary High School certificates, candidates for Interim High School Specialists' certificates in Science will take the seminar in Science.

(2) The following are the main topics for consideration in the seminar:

Manipulation: Practice with apparatus used in High School demonstrations; preparation of illustrative charts; the projection lantern; photography; preparation of lantern slides; care of aquaria and vivaria; growth of plants for experiments in vegetable physiology; collection and preservation of botanical and zoological material for Upper School work.

Equipment: Laboratory accommodation; arrangement of laboratories; lighting and ventilation; arrangement and structure of benches and other furniture; care and purchase of apparatus; chemicals and minerals, most suitable kinds, method of preparation and storage; reference works and periodicals in science for the High School library.

Methods of treating topics difficult of presentation in physical geography, physics, chemistry, biology, mineralogy and geology discussed, and illustrated in lessons selected from the following topics: geological history of the Great Lakes in its relation to the physical features of Ontario; geographical significance of minerals and rocks; protection and colour of animals; Mendelism; plants in relation to insects; form and colour of

flowers; parasitic and saprophytic plants; insectivorous plants; laws of combination in chemistry; symbols, formulae, and equations; valency; aromic and molecular theories; Boyle's Law; Charles' Law; electron theory of matter; absolute temperature; relation of acceleration, momentum, force, and energy; surface tension; flow of liquids.

Books of Reference:

Davis: Natural History of Animals.
Ganong: The Teaching Botanist.
Ganot: Text-book in Physics.
Kerner: Natural History of Plants.
Laboratory Accommodation, Pamphlet No. 9 of Department of Education of Ontario.
Mann: The Teaching of Physics.
Mellor: Modern Inorganic Chemistry.

CLASSICS (LATIN AND GREEK).

69. (1) Candidates for Interim First Class Grade B certificates will take Sections A and B; candidates for Interim First Class Grade A (Course II) certificates will take Section C; candidates for Interim Ordinary High School certificates will take Sections A and D.

(2) The following are the main topics of the course:

A. The relation of method in teaching Latin or Greek to linguistic method in general; the effect of the object of teaching Latin or Greek upon the method in various departments, such as oral reading, grammar, translation, sight reading, and the literary or historical content; illustration of methods in typical lessons.

B. Pronunciation; oral reading, sight reading, and English translation of the first reading lessons in the High School Latin or Greek Book; general principles of word-structure and sentence-structure; word order; special topics of inflection and syntax included in the earlier lessons of the Latin and Greek Books; methods of teaching the parts of a lesson, the subject matter, the vocabulary, and the exercises.

C. Oral reading, sight reading, and English translation prescribed for Normal Entrance or Pass Matriculation; special topics of inflection and syntax included in the later lessons of the Latin and Greek Books.

D. Pronunciation; oral reading, sight reading, and English translation as prescribed for Normal Entrance or Pass Matriculation; general principles of word-structure and sentence-structure; word order; methods of teaching the parts of a lesson; the direct method; topics of inflection and syntax as found in the Latin and Greek Books; special emphasis on difficult topics.

DETAILS OF COURSES.

Books of Reference:

Bennett: The Teaching of Latin.
Chickering and Hoadley: Beginner's Latin by the Direct Method.
Crawford: On Pronouncing Latin.
Hale: The Art of Reading Latin.
Westaway: Quantity and Accent in the Pronunciation of Latin.
Bristol: The Teaching of Greek.
Thompson: Homeric Grammar.
Goodwin: Greek Grammar.
Goodell: Greek Grammar.
Arnold: On Translating Homer.

SEMINAR IN CLASSICS.

70. (1) In addition to the work in Classics required from candidates for Interim Ordinary High School certificates, students who are candidates for Interim High School Specialists' certificates in Classics will take the seminar in Classics.

(2) In the seminar in Classics topics are chosen germane to the teaching of Horace, Vergil, Cicero, Caesar, Xenophon, and continuous Latin prose composition. The following list will show the nature of the topics for discussion:

The teaching of Horatian metres; the poetic art of Horace; the translating of Horace into English prose; the use of metrical versions; certain Asclepiadean odes; the national odes; Horace's treatment of religion, death, friendship, and fortune; the selection of "fine lines"; the complete teaching of an ode of Horace; the appropriate commentary.

The teaching of Vergil in an honour class; the difficulties in translating Cicero; what T. Rice Holmes has done for the teaching of Caesar; the sequence of tenses in Caesar's indirect discourse; the teaching of Latin prose composition; the teaching of Xenophon in an honour class; the classical library.

The direct method in Latin and Greek.

Books of Reference:

Bennett and Bristol: The Teaching of Latin and Greek.
Johnson: Pamphlets on the Teaching of Caesar and Vergil.
Hale: Pamphlets on the Art of Reading Latin.
Articles in the "Classical Journal".

FRENCH AND GERMAN.

71. (1) Candidates for First Class Grade B certificates will take sections A, C, E, F, G (*a*), H (*a*). The instruction in this course will be limited to the French language.

DETAILS OF COURSES

Candidates for Ordinary High School or First Class Grade A certificates (Course II) will take the whole course as outlined. The instruction in this course will be based upon the French or the German language as the candidate may elect.

(2) The following are the main topics of the course:

A. Introductory: Importance of the study of a modern language; aims of the study; general instructions in regard to conducting classes with the purpose of helping the student to profit from observation lessons.

B. History of methods; consideration of methods formerly employed or still in vogue; the beginnings of modern language study; the Grammar method; the Natural method; the Reading method; the Psychological method of Gouin; the Direct method as used at present in Great Britain and other countries.

C. Study of Methods: A comparison of methods in view of the present conditions in the schools, *e.g.*, the age and attainments of pupils, the size of classes, allotment of time, text-books in use, regulations governing the teacher; illustrative lessons.

D. Pronunciation: Study of phonetics; the international phonetic alphabet; phonetic texts and dictionaries; drill in pronunciation; oral work; conversation.

E. Elementary Classes: Classes conducted without a text-book; the study of sounds; conversation lessons; how to make use of the objects of the classroom, pictures, and drawings; value of unison work; variety and interest; dictation; note-books and their correction; books and pictures; necessity for thorough drill.

F. Grammar: Inductive and deductive teaching; grammatical rules and their value; special illustrative lessons on essentials.

G. Special review lessons upon certain topics in Grammar as follows: (*a*) Elementary Grammar, covering the work done in the Lower School of the High School or in Grade C Continuation School. (*b*) More advanced Grammar, covering the work done in the Middle School of the High School, or in Grade A or Grade B Continuation School.

H. Translation into English; when to introduce a Reader; the grammatical preparation necessary; idiomatic translation; methods of conducting the recitation. Special consideration of selected passages from the texts as follows: (*a*) The portion of the Reader usually studied in the Lower School of the High School and in Grade C Continuation School. (*b*) The Authors prescribed for Junior Matriculation.

I. Advanced work to be based on models; free reproduction; original essays by the pupil; writing of letters; methods of correction; training in the use of the dictionary and of other aids.

DETAILS OF COURSES.

J. Bibliography: Students will be furnished with the addresses of the best houses which publish books of interest and value to the teacher. Lists will be given of the best books regarding grammar, oral work, pronunciation, manners, customs; dictionaries, and general literature.

Books of Reference:

Jespersen: How to Teach a Foreign Language.
Brebner: Teaching of Modern Languages in Germany.
Bahlsen: Teaching of Foreign Languages.
Breul: Teaching of Modern Languages.
Savory and Jones: Sounds of the French Language.
Dumville: French Pronunciation.
Vietor: German Pronunciation.
Heath: Report of the Committee of Twelve.
Bagster-Collins: The Teaching of German.

SEMINAR IN FRENCH AND GERMAN.

72. (1) In addition to the work in French or German required from candidates for the Interim Ordinary High School certificate, candidates for the Interim High School Specialist's certificate in French and German or in Moderns and History will take this seminar.

Having regard to conditions in the High Schools, the discussions in this seminar will have reference in the main to the French language and will be adjusted to the needs of the candidates whose academic courses included Spanish in lieu of German.

(2) The seminar will lay special stress upon the consideration of the value, aims, and methods of linguistic training; the relation of linguistic training to literary culture; history of methods formerly employed in the teaching of modern languages in the secondary schools of France, Germany, Great Britain, and the United States; the necessity for better methods in Ontario; the Direct Method illustrated in the class-room; a study of French life, manners, and institutions; the importance of pronunciation; the value and use of phonetic symbols, use of phonetic charts and wall-pictures; typical lessons in advanced grammar, conversation, translation, sight reading, prose composition; free reproduction exercises, dictation, and audition; writing and correction of passages in French composition; consideration of books helpful to the teacher; the extent of the courses in the Upper School; writing essays on allotted subjects.

Books of Reference:

Bagster-Collins: German in Secondary Schools.
Bahlsen: Teaching of Modern Languages.
Brebner: Method of Teaching Modern Languages in Germany.
Dumville: French Pronunciation.
Geddes: French Pronunciation.
Gouin: The Teaching and Studying of Languages.
Jespersen: How to Teach a Foreign Language.

DETAILS OF COURSES.

Books of Reference.—Continued

Rippman: Elements of Phonetics.
Savory and Jones: Sounds of the French Language.
Sweet: Practical Study of Languages.
Walter: Zur Methodik des neusprachlichen Unterrichts.

VOCAL MUSIC.

62. (1) Candidates for Interim First Class Grade B, First Class Grade A, and Ordinary High School certificates will take this course. For candidates for High School certificates the instruction will be of a more advanced character.

(2) The course will be both practical and theoretical and will include:

Tune: All intervals of the Major Diatonic Scale, both from the Tonic Sol-fa and staff; the relative minor of each major key; transition to the dominant and sub-dominant (sharp and flat keys).

Time: Whole pulse, continued pulse, silent pulse, and pulse divided into halves, quarters, and thirds with the various combinations of these in simple and compound duple, quadruple, and triple times. All the above in both the Tonic Sol-fa and staff notations.

Ear-training in Time and Tune: Recognition of rhythm and tone, of short musical phrases when played or sung, and their expression in either notation.

Voice-culture: Breath-control, tone production, vowel-formation, enunciation of consonants, correct intonation, blending of registers, and general training for quality, range, and flexibility.

Sight-singing: Singing from pointing on modulator or staff. Singing at sight easy passages containing the varieties of time and tune mentioned above.

Songs: The study of songs, in one or two parts, suited to the requirements of pupils in various school grades; with special attention to accent, enunciation, phrasing, quality of tone and expression.

Notation: Elements of notation, both Tonic Sol-fa and staff; the formation of the major and minor diatonic scales; elements of modulation and transposition.

Vocal Physiology: Anatomy of lungs, larynx, and resonating cavities; comparison of abdominal, intercostal and clavicular methods of breathing; action of vocal chords in production of tone and of the various vocal registers; influence of resonating cavities upon quality of tone and vowel; care of voice in speaking and singing.

Methods: The grading of school music to suit the development of the pupils and the methods of teaching both systems.

DETAILS OF COURSES.

Books of Reference:

Cringan: The Educational Music Course.
Cringan: Teacher's Handbook of Tonic Sol-fa System.
Curwen: The Standard Course.
Curwen: The Teacher's Manual.
Hardy: How to Train Children's Voices.
Mason: How to Teach the Staff Notation.
Hulbert: Breathing for Voice Production.

MANUAL TRAINING.

74. (1) Candidates for Interim First Class Grade B and Interim First Class Grade A (Course I) certificates will take this course.

(2) The following are the main topics of the course:

The place and purpose of manual training in the curriculum; its relation to the work of the Public School and of the High School, and to industrial education; the relation of educational value to practical utility. Class organization and management.

The equipment for urban and rural schools.

Typical forms of constructive work suitable to Forms I, II, and III of the Public School, such as elementary work in paper and cardboard, weaving, and modelling; the use of such exercises in the expression of the child's ideas and in correlation with the other subjects of the curriculum.

Modelling: Materials used, modelling natural forms, modelling as a means of expression, its use in the teaching of geographical concepts and primary reading, also of drawing and design.

Work suitable to Forms IV and V: Advanced cardboard work, portfolios, book-binding, picture mounting.

Mechanical drawing: Its use, its relation to freehand drawing and to perspective, simple exercises for practice, plans and blue prints.

Woodwork: The workshop, tools, and materials; how to take care of tools and keep them in order; woods suitable for manual training work; designing; a short course in bench-work.

Books of Reference:

Public School Manual: Manual Training.
Baxter: Paper and Cardboard Construction.
Dobbs: Primary Handwork.
Lester: Claywork.
Noyes: Handwork in Wood.
Prang: The Manual Arts for Elementary Schools.

HOUSEHOLD SCIENCE.

75. (1) Women students who are candidates for Interim First Class Grade B and Interim First Class Grade A (Course I) certificates will take the course given below.

DETAILS OF COURSES.

(2) The following are the main topics of the course:

Introductory: The scope of Household Science.

Equipment: The equipment for urban and rural schools.

The House: Purpose; location; general ideas concerning use and furnishing of rooms; methods of cleaning, including principles of laundering.

Foods: Elements of food required by the body; sources, food value, and digestion; analysis of common foods: milk, eggs, meat, fruit, vegetables, cereals; effect of heat on these, as to food value, digestibility and flavour.

The principles of feeding during infancy and childhood.

Cookery: Principles of combustion; construction and care of stoves; fuels; principles and practice of each method of cooking: boiling, simmering, steaming, steeping, toasting, broiling, frying, baking; food combinations; flour mixtures; lightening agents used in these; table service; preparation and serving of school lunches.

Bacteriology: Occurrence and nature of bacteria; sanitation, necessity for cleanliness, care of plumbing, disposal of waste, methods of disinfection; preservation of foods.

Home Nursing: The ideal sick-room, having regard to location, furnishing, ventilation, heating, care; care of the patient, having regard to bath, bed, clothing and food.

Hand Sewing: General rules for sewing; study and application of different stitches, seams, and hems; button-holes and sewing on buttons· repairing, darning, and patching.

Textiles: Study of four principal fibres: cotton, linen, wool and silk; their properties in relation to use; names, kinds, widths and prices of common materials; adulteration of materials.

Organization and management of class in household science; methods of teaching household science.

Books of Reference:

Ontario Public School Manuals: Household Management, Sewing, Household Management for Rural Schools.

Danniels: Furnishings of a Modest Home.

Greer: Food and What It Does.

Jones: Lessons in Elementary Cooking.

Lincoln: The School Kitchen.

Walker: Manual of Needlework and Cutting-Out.

SEMINAR IN HOUSEHOLD SCIENCE.

76. (1) Candidates for Interim High School Specialists' certificates in Household Science will take the seminar in Household Science.

(2) The seminar will deal with the following main topics: The relation of household science to the other subjects of the curriculum; the effect of the teaching of household science upon the life of the community;

DETAILS OF COURSES.

household science in the Public School, in the High and Technical Schools and in the University; accommodations and equipment for household science work in the various types of schools; courses of study; methods of instruction; use of equipment and note-books; use of text-books; discussion of selected parts of the High School course of study.

Books of Reference:

Ontario Public School Manuals: Household Management, Sewing.
Hutchinson: Food and Dietetics.
Lincoln: The School Kitchen.
McGlanfin: Handicraft for Girls.
Wilson: Handbook of Domestic Science and Household Art.

WRITING.

77. (1) Candidates for Interim First Class Grade B and Interim First Class Grade A (Course I) certificates will take this course.

(2) The following are the main topics of the course:

Methods: Various styles of penmanship, their advantages and their disadvantages, and their relative importance; the child's difficulties in mastering writing; the earliest lessons and the work preliminary to formal writing; the steps in the lessons and the standards in the intermediate and the senior grades; the materials to be used; the various writing movements and their value; relation of teaching lessons to home or seat exercises: right posture and penholding; the eye and its control of penmanship: importance of good writing materials; formal drills: various forms of movement drills, the best organization of these exercises; counting, its purpose, its use; relations of speed and accuracy; letter groups on the basis of movement; the proper formation of the small and capital letters and the figures; the chief defects in children's penmanship, their causes, detection and thorough correction; individual *versus* class errors; treatment of pupils having some physical disability; uniformity of attainment in a class, its value, how fostered; prevention of scribbling; observing the conventional letter forms throughout the grades; formation of a characteristic hand; economizing time; use of standard charts for judging writing.

Practical exercises in writing. These exercises may vary in character and extent with the needs of the individual student.

Books of Reference:

Ontario Public School Manual: Writing.
The Ontario Writing Course.

ART.

78. (1) Candidates for Interim First Class Grade B and Grade A (Course I) certificates will take this course.

(2) The following are the main topics of the course:

DETAILS OF COURSES.

THEORY AND PRACTICE:

A. Representation: Freehand drawing in outline and in values: The use of the pencil, and of the brush; the drawing of straight lines, of circles and ellipses, of squares and rectangles; the drawing of common flat objects, such as grasses, leaves, plates, fans, a checkerboard; the drawing of simple objects in the flat only, such as toys, jars, trees, houses; the principles of freehand perspective as illustrated in the drawing of the cylinder and the cone, the rectangular prism and the square pyramid, and of common objects founded upon these simple models; the effect of light upon objects; the neutral value scale; the drawing of common objects in light and shade; the drawing of cast shadows; the principles of good composition; the drawing of groups of objects showing good composition; the drawing of simple landscapes; the illustrating of games, occupations, stories, quotations; pose drawing of children, the drawing of common birds and domestic animals.

Freehand drawing in colour: The use of water colours and coloured crayons; the making and applying of simple washes; the study of colour, the primary, secondary, and complementary colours; hues of colour; tones of colour; the graying of colours; colour harmony; the representation in colour of leaves, grasses, flowers, fruits, trees, and common objects; simple landscape drawing; illustration.

Exercises in time drawing, and in memory drawing.

Blackboard drawing: Its importance to the teacher; rapid illustrative sketches in white, black, and coloured crayons on the blackboard and on large sheets of paper.

Elementary mechanical perspective.

Elementary modelling in clay and plasticine.

B. Design and Lettering: The principles of rhythm, balance, and harmony in decorative design; the use of natural and geometric forms in design; the use of historic ornament in design.

The making of surface designs to be applied to useful purposes, such as borders, surface patterns, festival cards, menus, programme covers, book covers, posters, etc.

The carrying out of designs in neutral values and in colour.

The formation of single stroke letters and figures with the freehand.

Lettering with the freehand and with mechanical aids; the principles of good spacing; the formation of Gothic and of standard Roman capitals; modifications of them for decorative purposes.

The study of school and home furnishing and decoration.

C. The Study of Masterpieces and of the History of Art: The study of pictures; the study of architecture; the study of sculpture;.

A concise outline of the history of art.

Methods: Methods of teaching art in the Public and Separate Schools.

DETAILS OF COURSES.

Books of Reference:

Ontario Teachers' Manual: Art.
Prang's Art Education for High Schools.
Crane: Line and Form.
Cross: Light and Shade:
Dow: Composition.
Branch: Design.
Cross: Colour.
Norton: Freehand Perspective and Sketching.
Whitney: Blackboard Drawing.
Caffin: Guide to Pictures.
Sturgis: The Appreciation of Pictures, Architecture, Sculpture.

HYGIENE.

79. (1) Candidates for Interim First Class Grade B and Interim Ordinary High School certificates will take this course.

(2) The following are the main topics of the course;

School and Home Hygiene: School sanitation; home sanitation; common facts of bacteriology; general instruction for the detection of communicable diseases; provisions of the Ontario Public Health Act and Regulations so far as they refer to pupils, teachers, and school boards.

Personal Hygiene (with the necessary minimum of anatomy and physiology): Framework of the body; spinal curvature—its causes. Digestive system: foods; care of teeth; saliva. Physiology of respiration and circulation; skin and other depuratory organs; hair, nails, bathing, clothing, etc. Muscles: relation of exercise to health. Brain and nervous system; relation of mind to body; mental exercise; study; rules regarding mental work; irregular work and over-work; mental strain and worry. Effects of alcohol, tobacco, etc., on organs and functions.

Physical Defects of the Eye: Affections of eyes due to improper school accommodations; colour blindness; tests for defective vision. Ear, nose, and throat troubles causing dullness in pupils; tests for defective hearing and breathing.

Accidents and Emergencies: First aid in such cases as fainting, suffocation, drowning, hemorrhage, fractures and dislocations, venomous stings, poisoning, frost-bites, sunstrokes and heatstrokes, burns; bandaging.

Books of Reference:

Ontario Public Health Act and Regulations.
Allen: Civics and Health.
Gulick: Hygiene Series.
Martin: The Human Body.
Health Series of Physiology and Hygiene.

DETAILS OF COURSES.

PHYSICAL CULTURE.

80. (1) Candidates for Interim First Class Grade B certificates will take Section A; candidates for Ordinary High School Assistant's and Interim First Class Grade A (Course II) certificates will take Section B. Each of Sections A and B includes the work for the Strathcona Grade B certificate.

(2) The following are the main topics of the course:

A. Effects of physical culture; its hygiene; general directions for exercises; simple exercises and positions; marching, running, jumping, and breathing exercises; the arrangement of the class (order movements); order and progression of exercises; the exercises in Series A, B, and C, of tables 1-72 of *The Syllabus of Physical Exercises for Schools;* supplementary physical exercises; abdominal exercises, skipping exercises, dancing steps; indoor and outdoor games; classroom exercises; corrective exercises; dress suitable for the exercises; calisthenics and drill.

Books of Reference:

The Syllabus of Physical Exercises for Schools.
Barton: Physical Training.
Bancroft: Games for the Playground, Home, School, and Gymnasium.
Kimmons: Guild of Play Book. Parts I, II, III.
Mari Hofer: Popular Folk Games and Dances.
Burchenal: Dances of the People.
Burchenal: Folk Dances and Singing Games.

B. PRINCIPLES: (For men and women):

Anatomy: Bone, composition, classification; bones of upper extremity; bones of the vertebral column; bones of the head; bones of the abdomen and thorax; bones of the lower extremity. Joints: Classification and description of movable joints; importance of joints. Muscle: Varieties, origin, insertion and action. Digestive system, stomach, liver, etc. Circulatory system: heart, arteries, veins, etc. Respiratory system. Nervous system.

Physiology: Oxidation and waste; metabolism; blood, composition, quality, the heart beat; respiration, mechanism, changes in the lungs, in the tissues; nervous mechanism of respiration; physiology of muscle. Digestion; digestive juices; function of saliva; gastric juice, pancreatic juice, and bile; succus entericus; changes in the food in the alimentary canal; lymph, movements; absorption. Nutrition; comparison of income and output of material, animal heat; diet.

First Aid to the Injured: Shock, wounds, bleeding, burns, exposure to cold, frostbite, fractures, sprains and dislocations, restoration of the apparently drowned, choking, foreign bodies in eye or ear, unconsciousness, fainting, apoplexy, heatstroke, poisons, bandaging.

DETAILS OF COURSES.

PRACTICE: (For men only):

Calisthenics. Dumb-bells—Roberts, Barton, combinations; wands—elementary, Barton, miscellaneous; clubs—class club-swinging.

Elementary Exercises on Apparatus: Horse: vaults, flank, front, rear, screw, squat, straddle, wolf; mats: jumps and hops, jumps and hops with turns, underswings, underswings with turns, buck, vaults, same as on horse and vaulting bar.

Indoor Games: Course to enable teachers to coach and referee the following games: basketball, indoor baseball, volleyball.

Outdoor Athletics: Field and track sports. Course to enable teachers to coach athletics and to direct athletic meets, starting, sprinting, running, broad jump, high jump, shot put, hurdles.

Boxing and single sticks, bayonet exercises; squad and company drill; rifle and musketry practice and skirmishing; saluting ; signalling; instruction in use of subtarget.

Swimming: Elementary.

Mutual instruction in the various exercises.

PRACTICE: (For women only):

Squad drill, marching tactics, wheeling, turnings.

Freehand exercises, including Strathcona Trust exercises; dumb-bell drills, elementary, advanced; wand drills, Barton; Anderson's twist drill; clubs, classified exercises.

Elementary exercises on the following apparatus: horse, mats, vaulting bar, buck, rings, Swedish stall bars, suspended ladder.

Indoor Athletic Sports: Running races, gymnasium games, including basket-ball; schoolroom and playground games.

Dancing: Technique of dancing; simplified athletic dances; folk dances and singing games; old English country dances.

Swimming: Elementary.

Mutual instruction in the various exercises.

Books of Reference:

The Syllabus of Physical Exercises for Schools.
Barton: Physical Training.
Bancroft: Games for Playground, Home, School and Gymnasium.
Corsan: At Home in the Water.
Chalif: Chalif Text-book of Dancing.
Burchenal: Dances of the People.
Burchenal: Folk Dances and Singing Games.

DEGREES IN PEDAGOGY.

GENERAL INFORMATION.

Recent Statutes have made important changes in the former regulations as to the degrees in Pedagogy. The fee schedules have been readjusted; the courses themselves have been reorganized in sympathy with later movements in education, while they have also become more professional in purpose; and the examinations have been divided into subjects to be taken in the same or different years; and, through the staff of the Faculty of Education, the University will give assistance in the form of suggestions as to reading to all candidates for the degrees.

By a joint arrangement with the Faculty of Education of Queen's University Summer Courses of instruction for candidates for degrees in Pedagogy are offered as follows:

In the summer of 1919 in the Science of Education and in the History of Education at Queen's University.

In the summer of 1920 in Educational Psychology and in School Administration at the University of Toronto.

DEGREE OF BACHELOR OF PEDAGOGY.

The degree of Bachelor of Pedagogy (B.Paed.) is granted to students in the Faculty of Education under the following conditions:—

1. The candidate shall hold (*a*) a degree in Arts or Science, not being an honorary degree, from any university in the British Dominions; and (*b*) a first class or High School Assistant's certificate granted by the Department of Education of Ontario, or a certificate of equal value.

2. The candidate shall pass examinations in the Science of Education, Educational Psychology, the History of Education and Educational Systems, and Educational Administration and Organization.

3. Before he completes the examinations for the degree the candidate shall submit certificates of at least two years of successful experience in teaching.

4. The candidate shall register in the Faculty of Education at least six months before he presents himself for examination. The fee for registration is $10.

5. The examination shall be held in February at the University of Toronto or in any other locality in the province chosen by the candidate and approved by the Senate and under a presiding examiner appointed by the Senate, provided the candidates thereat defray the cost of the local examination. The candidate shall send notice not later than the 1st of

January of his intention to take the examination and of the locality he has chosen for such examination.

6. The fee is $10 for the full examination or $3 for each subject if taken separately. The fee for the degree is $20. All fees shall be paid to the Bursar with the application for registration or examination as the case may be.

7. The work in each subject may be taken and will be examined on separately. On the report of the Instructors concerned, a maximum of 50% of the marks for the final examination in any subject may be assigned to the work of the candidate in that subject at a Summer Session. The standard for a Pass degree shall be 60 per cent. of the marks assigned to each subject. The candidate who obtains 60 per cent. of the marks of each subject and 66 per cent. of the aggregate of marks shall be awarded a degree with Second Class Honours. The candidate who obtains 60 per cent. of the marks of each subject and 75 per cent. of the aggregate of marks shall be awarded a degree with First Class Honours.

A maximum of 50 per cent. of the marks for the final examination in any subject may be assigned on the report of the instructor on the work of the candidate in that subject at a Summer Session.

8. *Subjects of Examination.*

(The bibliographies given below are not obligatory; they are suggestive only.)

(i) The Science of Education, including a study of the philosophical ethical, and sociological bases of education. (Two papers.)

References :—Alexander. A Short History of Philosophy.
Bagley. The Educative Process.
Dewey. The School and Society.
The School and the Child.
Mac Cunn. The Making of Character.
Ruediger. Principles of Education.
Spencer. Education.
Watson. Outlines of Philosophy.

(ii) Educational Psychology. (Two papers.)

References:—Hall. Aspects of Child Life.
McDougall. Physiological Psychology. (New ed.).
Parker. Methods of Teaching in High Schools.
Pillsbury. Essentials of Psychology.
Sandiford. Mental and Physical Life of School Children.
Titchener. Textbook of Psychology.

(iii) The History of Education and Educational Systems. (Two papers.)

DEGREES IN PEDAGOGY.

References:—Davidson. Rousseau and Education according to Nature.
De Garmo. Herbart and the Herbartians.
Fletcher and Welton. Froebel's Chief Educational Writings.
Freeman. Schools of Hellas.
Graves. History of Education (3 vols.).
Green. Pestalozzi's Educational Writings.
Monroe. Textbook in the History of Education.
Monroe. Comenius.
Monroe. Source Book for the History of Education.
Parker. History of Modern Elementary Education.
Wilkins. Roman Education.
Woodward. Vittorino da Feltre.

(iv) Educational Administration and Organization, including an examination of the outlines of the present-day educational systems of Germany, France, England, and the United States. (Two papers.)

References:—Bolton. The Secondary School System of Germany.
Brown. American High Schools.
Butler. Education in the United States.
Dutton & Snedden. Administration of Education in the United States.
Farrington. The Public Primary School System of France.
Farrington. French Secondary Schools.
Monroe. Cyclopedia of Education.
Sandiford: (editor). Comparative Education; Studies of the Educational Systems of Six Modern Countries.
Seeley. The Common School System of Germany.

DEGREE OF DOCTOR OF PEDAGOGY.

The degree of Doctor of Pedagogy (D.Paed.) is granted to students in the Faculty of Education under the following conditions:

1. The candidate shall hold a degree in Arts or Science, not being an honorary degree, from a University in the British Dominions and a first class or High School Assistant's certificate or its equivalent.

2. Before he completes the examinations for the degree, he shall submit evidence of at least three years of successful experience as teacher or inspector.

3. The candidate shall register in the Faculty of Education at least six months before he presents himself for examination. The fee for registration is $10.

DEGREES IN PEDAGOGY.

4. After the examinations of February, 1919, no candidate for the degree of D.Paed. will be admitted to the examination in any subject of the course who has not attended a Summer Course (or its equivalent) in that subject; but this section shall not apply to any candidate who had passed an examination in any subject of the course prior to May, 1918.

5. The candidate shall pass examinations in the Science of Education, Educational Psychology, the History of Education, and Educational Administration and Organization. He shall also submit on or before November 1st, a thesis on some educational topic selected with the approval of the Faculty of Education. In valuing this thesis literary excellence, as well as the discussion of the subject, will be taken into account. After the examiners have reported in favour of the candidate's answer papers and thesis, and before the degree of D.Paed. is conferred, the candidate shall furnish the Registrar of the University with one hundred printed copies of the thesis.

6. The examination, which may be taken as a whole or separately in subjects, shall be held at such times and under such conditions as to date of application, place of examination, division of the examination, etc., as obtain with the Bachelor's degree.

7. Candidates who possess partial standing in the D. Paed. courses may, with the consent of the Council of the Faculty of Education, have that standing applied in qualification for the B.Paed degree.

8. The fee for the whole examination is $10, and for each subject, when taken separately, $3. The fee for the degree is $25. All fees shall be paid to the Bursar with the applications.

9. *Subjects of Examination.*

(The bibliographies given below are not obligatory; they are suggestive only.)

(i) The Science of Education, including a study of the philosophical, ethical, and sociological bases of education. (Two papers.)

References:—Adams. Evolution of Educational Theory.
Bosanquet. Education of the Young in Plato's Republic.
Bosanquet. Philosophic Theory of the State.
Cooley. Human Nature and the Social Order.
Croce. Philosophy of the Practical (trans. Ainslie).
Dewey. Schools of To-morrow.
Everett. Moral Values.
MacIver. The Community.
Todd. Theories of Social Progress.
Wallas. The Great Society.
Wallas. Human Nature in Politics.

DEGREES IN PEDAGOGY.

(ii) Educational Psychology. (Two papers.)

References:—Hall. Adolescence. 2 vols.
Huey. Psychology and Pedagogy of Reading.
James. Principles of Psychology. 2 vols.
Judd. Psychology of High School Subjects.
Ladd & Woodworth. Elements of Physiological Psychology.
McDougall. Social Psychology.
Rugg. Statistical Methods applied to Education.
Terman. The Measurement of Intelligence.
Thorndike. Educational Psychology. 3 vols.

(iii) The History of Education and Educational Systems from 1800 to the present day, with special reference to Germany, France, Great Britain, the United States, and Ontario. (Two papers.)

References:—Balfour. The Educational Systems of Great Britain and Ireland.
Birchenough. History of Elementary Education in England and Wales.
Brown. The Making of our Middle Schools.
Coleman. Public Education in Upper Canada.
Dexter. History of Education in the United States.
Farrington. The Public Primary School System of France.
Farrington. French Secondary Schools.
Findlay. Arnold at Rugby.
Fletcher & Welton. Froebel's Chief Educational Writings.
Graves. History of Education (vol. 3).
Green. Pestalozzi's Educational Writings.
Green. Life and Works of Pestalozzi.
Herbart. Outlines of Educational Doctrine (Lange and De Garmo).
Monroe. Textbook on the History of Education.
Parker. History of Modern Elementary Education.
Paulsen. German Education, Past and Present.
Putman. Egerton Ryerson and Education in Upper Canada.
Russell. German Higher Schools.
Spencer. Education.

Candidates are also advised to consult, if accessible, the following:
The Special Reports of the English Department of Education.
The Reports of the United States Commissioner of Education.
Barnard. American Journal of Education.
The Reports of the Minister of Education, Ontario.
Monroe's Cyclopedia of Education, Hodgins' Documentary History of Education in Upper Canada, Canada and its Provinces, vol. xviii.

DEGREES IN PEDAGOGY.

(iv) Educational Administration and Organization in Germany, France, England, and the United States, and with special reference to the administration and organization of education in Ontario. (Two papers.)

References:—Brown. The Training of Teachers for Secondary Schools.
Burstall and Douglas. Public Schools for Girls.
Cubberley. Public School Administration.
Farrington. The Public Primary School System of France.
Farrington. French Secondary Schools.
Johnson. High School Education.
Kandel. Elementary Education in England.
Kandel. The Training of Elementary Teachers in Germany.
Monroe. Principles of Secondary Education.
Norwood and Hope. Higher Education of Boys in England.
Ontario. The Acts, Regulations, Instructions of the Department of Education.
Sandiford: (Editor). Comparative Education: Studies of the Educational Systems of Six Modern Countries.
Sandiford. The Training of Teachers in England and Wales.
Seath. Education for Industrial Purposes.
Snedden. Problems of Secondary Education.
Strayer and Thorndike. Educational Administration, Quantitative Studies.

(Candidates are advised to consult, if accessible, the Special Reports of the Board of Education, England; the Reports and, in particular, the Bulletins of the United States Commissioner of Education, the Reports of the Minister of Education, Ontario: and Monroe's Cyclopedia of Education.)

FACULTY OF EDUCATION.

LIST OF STUDENTS REGISTERED FOR SESSION, 1918-19.

First Class Grade B Course.

Agar, W.....Ridgetown
Allison, Catherine.....St. Eugene
Ames, V. N.....Collingwood
Amos, Jessie E.....Mt. Forest
Anderson, Mary E.....Acton
Armstrong, Olive V.....Bolton
Awde, F. Ina.....Dunnville

Bailie, J. A.....Galt
Baird, Kathryne.....Mull
Ball, Isabella L.....Harriston
Barnby, E. Jean.....Springfield
Beacon, E. C.....Toronto
Belfry, Elsie F.....Bradford
Bennett, Mary A.....Midland
Benson, Gena M.....Picton
Benson, H. J.....Rothsay
Betts, Marion I.....Tillsonburg
Bishop, May.....New Hamburg
Bole, C. L.....Woodville
Bovair, Evelyn D.....King
Brewer, Mildred E.....Bothwell
Brokenshire, Rheta E.....Lindsay
Brooks, E. F.....London
Brown, H. W.....Belmont
Brown, J. S.....Toronto
Brydon, E. Hope.....Guelph
Burns, Helen A.....Caledonia
Bush, J. A.....Toronto

Caldwell, Mary A.....Waterford
Campbell, S. Jean.....Ottawa
Cannom, L. Velma R.....Canton
Chambers, C. F.....Fenelon Falls
Church, Clara A.....Galt
Clipperton, J. W. H.....Toronto
Coburn, Lillian I.....Bradford
Cole, M. E. Ruth.....Brantford
Colhoun, Annie I.....Alvinston
Collin, L. J.....Peterboro
Connell, Constance L...Newcastle
Corlett, Etta M.....Ruthven
Corneil, Joy.....Omemee
Coulson, R. H.....Toronto
Coulter, Gladys I.....Chapman
Coumans, Melinda M...Chepstowe
Craven, H.....Guelph
Cringle, W. J.....Mt. Forest
Crone, Margaret J.....Toronto
Crosby, M. E. Blanche..Markham
Cushnie, John.....Mt. Forest

Darling, Elizabeth I.....Bradford
Davidson, C. F.....Aylmer
DeHart, Nora.....Barrie
DeLaplante, Frances..Owen Sound
Denike, Ruth L.....Norham
Dodds, Irene I.....Perth
Dodds, Ruth N.....Belmont
Donald, R. B.....Thedford
Dunlop, E. Eileen....Aylmer West

Eade, W. E.....Fort William
Echlin, Gladys M.....Hamilton
Edmonds, Ruth L. M.,
St. Catharines
Edwards, Mabel.....Ottawa
Ellerby, M. Irene.....Toronto
Elliott, Gladys S.....Tweed

Fair, G. Elizabeth.....Bervie
Ferguson, Doris.....Chatham
Findlay, Dorothy M. B....Toronto
Forster, Margaret B.....Watford
Fowler, A. C.....Wingham
Fox, Hilda L.....Collingwood
Fox, J. H.....Lambeth
Francis, G. C.....Putnam
Fuller, Helen R.....Brantford

Gardiner, Euphemia A., Mt. Forest
Gerrie, Margaret A.....Ingersoll
Gibb, Moyna B.....Blenheim
Girven, May M.....Bowmanville
Goldblatt, Ray.....Owen Sound
Gowdy, D. M.....Limehouse
Gray, M. A. Verlie.....Merlin
Green, G. Muriel....Owen Sound
Green, Myrtle E.....Cargill
Gregg, Hazel V.....Uxbridge

Haines, Muriel D.....Cheltenham
Halstead, Helen J.....Peterboro
Hanes, Marion E.....Hamilton
Harvey, Florence M....St. Thomas
Hayes, Thelma E.....Aurora
Heisey, K. B.....Markham
Henderson, B. Fern.....Whitby
Hetherington, Verna L.,
St. Catharines
Hibbard, Olive L.....Ridgeway
Hicks, Olive M.....Allanburg
Hodd, Edith M. .....Hamilton

Holmes, Myrtle O.....Paris
Houser, Florence....Humberstone
Howard, W. R.....Toronto
Howell, Fannie E.....Fonthill
Hughes, T. J.....Toronto
Humphries, Gladys E....Hastings

Jackson, L. C.....Brussels
Jarvis, Beatrice E.....Hamilton
Johnston, Jessie V.....Clifford
Jourdan, Harriett E., Newtonbrook

Kearney, Winnifred A.....Toronto
Kelk, Gladys G.....Hamilton
Kelly, Helen L.....Ingersoll
Kennedy, Florence I.....Hornby
Kerr, Jessie I.....Toronto
Kindree, J. S.....Cayuga
Kingston, E. F.....Forest
Knox, Mary E.....Orono

Langdon, C. V.....Brighton
Langdon, R.....Bracebridge
LaPiere, Marie E.....Sarnia
Leavitt, Irene...Caledonia Springs

Mackay, Laura A.....Woodstock
MacKay, Mildred M.....Milton
MacKenzie, Mattie H.....Mitchell
MacLachlan, Helen.....Mohawk
MacMillan, D. D.....Belmont
Malcolm, Dorothy.....Hamilton
Malcolm, Marjorie....Shanty Bay
Mansz, Thusnelda M.,
New Hamburg
Mark, Jetta M.....Parkhill
McCulley, J.....St. Thomas
McCullough, Mary.....Renfrew
McDougall, M. Evelyn...Petrolea
McGahey, Ruth M.....Lindsay
McGee, Marjorie E....Chesterville
McIntyre, A. F.....Owen Sound
McKechnie, Mary E.....Erin
McManus, Celestine E....Watford
McNabb, Elinor.....Melbourne
McNichol, Nellie F.....Dunnville
McTaggart, A. N.....Harriston
McWilliam, Mary M. .....Guelph
Melick, Anna.....Dunnville
Metherell, Annie C.....Toronto
Michener, Jessie M.....Dunnville
Middleton, Jean.....Clinton
Middleton, Maud..... Uxbridge
Miller, M. Olive.....Uxbridge
Mills, Electa M.....Kemptville
Mitchell, Elizabeth M. S....London
Moloney, Teresa.....Peterboro'
Moncrieff, Margaret R....Toronto
Moote, Dorothy M.....Dunnville
Morris, C. M.....Cobourg
Muckle, Leata W.....Blenheim
Mummery, Rita E.....Hamilton
Munro, E. Pearl.....Collingwood

Nephew, Ruth M.....Kincardine
Neven, Marie C.....Dublin
Nicol, Gladys.....Agincourt
Nolan, Mary E.....Bowesville
Norris, D. A.....Penetang
Nott, Mary A.....Fingal
Nutting, Rowena E.....Uxbridge

Ostrander, W. A.....Arthur

Parker, Marguerite F....Caledonia
Parrott, Leta D.....Uxbridge
Parson, Dorothy F. M....Otterville
Paterson, R. E.....Rodney
Penfold, Bessie G.....Guelph
Pettypiece, F. G. L.....Forest
Philpot, E. Viola.....Tara
Pollock, E. Jean....Norval Station
Pretty, Elsie I.....St. Thomas

Radford, Alicia A... ...Smithville
Rankin, A. Olive.....Seaforth
Raymond, Ursula.....Toronto
Reinke, Edna H.....Ancaster
Ridley, Marion J.....St. Mary's
Roberts, Mary G.....Actinolite
Roe, Laura J.....Brantford
Rose, Alta I.....Frankford
Ryckman, Irene M.....St. Thomas

Sargeant, Vera M.,
Sault Ste. Marie
Sauve, Dora M.....Chesterville
Savery, Lillian M.....Starkville
Schofield, Muriel M.....Oshawa
Scott, Alice E.....Belwood
Scott, M. M. Jean.....Forest
Scott, O. Muriel.....Aurora
Secord, Rachel A.....Guelph
Setterington, Ona A...Leamington
Shantz, Marie.....Waterloo
Skeoch, Sarah.....Fergus
Skuce, Vera L.....Lindsay
Sloman, Fred..... Clinton
Smith, F. Mydra.....Chatham
Smith, Helen K.....Niagara Falls
Snell, Blanche E.....London
Sprague, Lottie S.....Keswick
Squire, E. V.....Watford
Start, Isabel S.....Tara

Steele, Lillian O.....Mt. Forest
Stevenson, Muriel G.....Renfrew
Stewart, Mabel W.....Almonte
Strong, Harriet E.....Perth
Stuebing, A. Margaret....Canboro

Tanner, W. W.....Paisley
Taylor, N. A.....Belmont
Thompson, Annie M.....Almonte
Todd, Hazel A.....Kemptville
Torrie, W. A.....Orangeville
Tryon, Margaret J.....Priceville
Turnbull, Mabel E.....Seaforth
Turnbull, Ella W.....Seaforth
Turner, Ethel J.....Fergus
Turner, Helen M.....Barrie

Usher, Zella G.....Cobourg

Van Allen, K.C.....Belleville

Walker, Mary H.....Niagara Falls
Walker, Minnie R.....Toronto
Webster, Cecile S.....Smith's Falls
Weekes, F. S.....Smith's Falls
Wells, Jessie M. E.....Walkerton
Welsh, S R.....Moira
Wesley, Caroline.....Newmarket
Westbrook, Daisy.....Brantford
White, Mary E.....Tara
Wiles, Helen E.....Brantford
Williams, Grace E.....Sunderland
Williams, M. M.....Markham
Wright, Myrtle M.....Chesley

First Class Grade A Course.

Brothers, Muriel.....Brussels

Crawforth, Sarah.....Whitby

Edgar, Margaret.....Toronto

Nolan, Anastasia (Sr. Alexis) Peterboro

Course for Ordinary High School Certificates.

Appleyard, Edith M...Woodstock
Archibald, Bertha R.....Toronto
Armour, Elizabeth F., Campbellford
Black, Lillian M.....Toronto
Blatchford, D. H.....Listowel
Bridgman, Norma E.....Welland
Buchanan, Ruth C.....Galt

Child, Mabel C.....Toronto
Cook, C. C.....Streetsville

Dexter, Lillian E.....Toronto
Dinsmore, H. B.....Thornbury
Draper, Muriel L.....London

Finch, Ethel B.....St. Marys
Foulds, F. E.....Toronto

Giegerich, Laura C.....Kaslo, B.C.
Greenaway, C. R.....Toronto

Hamilton, G. G.....Toronto
Hart, N. C.....Reaboro
Haskett, Constance A.....Simcoe
Helmkay, Dora L.....Creemore
Helmkay, I. Beatrice....Creemore
Henry, Mamie E.....Thornton
Hood, Annie I.....Stayner
Hooker, I. Aletha.....Scotland

Isaac, J.....Durham

King, R. H.....Toronto
Klinkhamer, Rose E.....Dublin

Long, Irene.....Toronto

MacKay, Helen J.....Owen Sound
Maus, Adah.....Paris
McCullough, Charlotte S..Harriston
McDougall, Jean L.....Ottawa
McLellan, R. F.....Toronto
McMahon, Laura M.....Milford
McNair, Alice A.....Elgin Mills
McReavy, F. J.....Hamilton
Myers, Eva I.....Toronto

Pearson, Florence E.....Gore Bay

Rae, Margaret.....Toronto
Roach, Edith E.....Laurel

St. John, Helen B.....Toronto
Schultz, M. L.....Toronto
Sherrin, Marjorie L...Souris, Man.
Sillers, Annie M.....Walkerton
Sinclair, Muriel G.....Toronto
Skene, M. Vera.....Havelock
Smith, H. Kathleen.....Toronto
Strangways, Ruth E. A. ..Toronto
Stuart, Norma K.....Mitchell

Talbot, Constance M.....Grimsby
Taylor, Grace J.....Fairbank
Turville, A. Dorothy, London West

Walker, May.....Toronto
Wallace, P. A. W.....Toronto
Way, W. S.....Forest
Wiley, Nora R.....Toronto

Yourex, Isabelle C.....Toronto

Courses for Specialists.

Baillie, Grace S. T.....Toronto
Brothers, Muriel..... Brussels

Cameron, J. M.....Toronto
Campbell, A. D..... Kerwood
Cook, Marjorie.....Meaford

Edgar, Margaret.....Toronto
Ewing, C. M.....Ringwood

Found, Ada C.....Toronto

Hair, Margaret..... Waterford
Hartley, F. C.....Brantford
Hately, M. Enid.....Brantford

Ireland, N. J.....Peterboro
Jennings, F. C.....Toronto

McCrimmon, L. R.....Stratford
McEown, Ruth.....Toronto

Robb, G. W..... Markham
Ross, Frances C.....Cobourg

Smith, N. F.....Guelph

Thoms, Ida M. H.....Toronto
Twomey, Genevieve.....Toronto

Course for the Ordinary Certificate in Household Science.

Abernethy, Velma M.....Beeton
Auld, Dorothy I.....Regina

Curry, Lillian D.....St. John, N.B.

Earnshaw, Annie.....Toronto

Ferguson, Elsie. Richard's Landing

Hutchinson, Mary A., Mallorytown

Jenkins, Dorothy.....Aurora

MacDonald, Jean A. C., Wallaceburg
Marshall, Bertha F.....Regina
McColl, Margaret.....Regina

Potts, Florence A.....Toronto

Silver, M. Armorel.....Toronto
Sutherland, Christena M., Scotsburn
Troy, Gertrude.....London

Upshall, Martha H.....London

Courses for Degrees in Pedagogy.

Althouse, J. G.....Galt
Armstrong, G. H.....Toronto

Ballard, M. R....Moose Jaw, Sask.
Barnes, C. L.....Toronto
Brown, G. A.....Prince Albert, Sask.
Caldwell, Alex..... Cornwall
Campbell, J. D.....Stratford
Chisholm, W. I.....Peterboro

Daniher, E. L.....Toronto
Dee, A. A. (Bro. Austin)...Aurora
Devitt, S. G... .....Hamilton

Dunlop, W. J.....Toronto
Dunnett, A. H.....Toronto

Evans, G. E.....Napanee

Firth, Thos.....Lindsay
Forrester, J. W.....Winchester
Froats, W. C.....Carleton Place

Gibbard, A. H...Moose Jaw, Sask.
Goldstick, I.....London

Hamilton, D. E.....Toronto
Hedley, R. W.....Edmonton, Alta.

Hofferd, G. W.....London
Hume, W. E.....Toronto
Hunter, J. H.....Coaticook, Que.

Jennings, W. A.....Toronto

Kerr, Martin.....Hamilton

Lock, E. H., New Westminster, B.C.
Lockett, H. G.....Ingersoll
Lord, G. S.....Calgary, Alta.
Lougheed, W. J.....Toronto

MacDonald, D. D.....Toronto
MacDougall, J. B.....North Bay
Macpherson, F. F.....Hamilton
Madill, A. J.....Peterboro
Mark, C. E.....Ottawa
Martyn, H. G.....Stratford
McCool, John.....Walkerton
McEachern, J. G.....St. Thomas
McGill, G. W.....Toronto
McIntosh, H. W.....Toronto
McKechnie, J. G.....Regina, Sask.
McKechnie, J. H.....Regina, Sask.
McLellan, J. C.....Toronto
Merrill, A. L.....Canora, Sask.
Mills, J. S.....Richmond, Que.
Morgan, J. J.....Edmonton, Alta.
Moshier, D. D.....Toronto
Murch, N. L.....Toronto

Nivins, Charles.....Regina, Sask.

Patterson, A. M.....Toronto

Quance, F. M.....Regina, Sask.

Radcliffe, S. J.....Toronto
Reed, G. H.....Toronto
Robbins, W. W.....Toronto

Scott, Walter.....Hardisty, Alta.
Seaton, E. T.....Hamilton
Shales, Walter E.....Arnprior
Sifton, W. J.....Moose Jaw, Sask.
Sinclair, Muriel G. O.....Toronto
Smith, Arthur.....Toronto
Spencer, E. I.....Wilkie, Sask.

Thompson, P. M.....Windsor
Tucker, Mary C.....Toronto

Walker, Duncan.....Toronto
Walks, R. H.....Toronto
White, E. T.....London
Wilkinson, J. E.....St. Thomas
Williams, W. H.....Toronto

THE

CALENDAR

OF THE

University of Toronto

FACULTY OF FORESTRY

1919-1920

UNIVERSITY OF TORONTO PRESS

THE

CALENDAR

OF THE

University of Toronto

FACULTY OF FORESTRY

1919-1920

UNIVERSITY OF TORONTO PRESS

1919 CALENDAR 1919

JANUARY						
Sun.	. .	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

FEBRUARY						
Sun.	. 2	9	16	23	..	
Mon.	. 3	10	17	24	..	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	..	..

MARCH						
Sun.	. 2	9	16	23	30	
Mon.	. 3	10	17	24	31	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	29	..

APRIL						
Sun.	. .	6	13	20	27	
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Fri.	. 4	11	18	25	..	
Sat.	. 5	12	19	26	..	

MAY						
Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. 2	9	16	23	30	
Sat.	. 3	10	17	24	31	

JUNE						
Sun.	. 1	8	15	22	29	
Mon.	. 2	9	16	23	30	
Tues.	. 3	10	17	24	..	
Wed.	. 4	11	18	25	..	
Thur.	. 5	12	19	26	..	
Fri.	. 6	13	20	27	..	
Sat.	. 7	14	21	28	..	

JULY						
Sun.	. .	6	13	20	27	
Mon.	. .	7	14	21	28	
Tues.	. 1	8	15	22	29	
Wed.	. 2	9	16	23	30	
Thur.	. 3	10	17	24	31	
Fri.	. 4	11	18	25	..	
Sat.	. 5	12	19	26	..	

AUGUST						
Sun.	. 3	10	17	24	31	
Mon.	. 4	11	18	25	..	
Tues.	. 5	12	19	26	..	
Wed.	. 6	13	20	27	..	
Thur.	. 7	14	21	28	..	
Fri.	1	8	15	22	29	..
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SEPTEMBER						
Sun.	. .	7	14	21	28	
Mon.	. 1	8	15	22	29	
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OCTOBER						
Sun.	.	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

NOVEMBER						
Sun.	. 2	9	16	23	30	
Mon.	. 3	10	17	24	..	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
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Sat.	1	8	15	22	29	..

DECEMBER						
Sun.	. .	7	14	21	28	
Mon.	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	31	
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1920 CALENDAR 1920

JANUARY						
Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
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FEBRUARY						
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Sat.	. 7	14	21	28	..	

MARCH						
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Thur.	. 4	11	18	25	..	
Fri.	. 5	12	19	26	..	
Sat.	. 6	13	20	27	..	

APRIL						
Sun.	. .	4	11	18	25	
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Sat.	. 5	12	19	26	..	

JULY						
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Mon.	. .	5	12	19	26	
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Sat.	. 7	14	21	28	..	

SEPTEMBER						
Sun.	. .	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	..	
Sat.	. 4	11	18	25	..	

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Thur.	. 7	14	21	28	..	
Fri.	1	8	15	22	29	..
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Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

CALENDAR 1919–1920

1919—July 1 Tuesday.....University Buildings closed.
July 10 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
Aug. 1 Friday.....Last day for receiving applications for the September Examinations in Arts.
Sept. 1 Monday.....Labour Day. University Buildings closed.
Sept. 2 Tuesday .....Last day for receiving applications for the Supplemental Matriculation Examination.
Sept. 4 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
Sept. 10 Wednesday...Supplemental Examinations in Arts begin.
Sept. 12 Friday.....Supplemental Junior Matriculation Examination conducted by the University Matriculation Board begins.
Sept. 26 Friday.....Meeting of University College Council.
Sept. 27 Saturday.....Meeting of the Faculty of Arts of Victoria College.
Sept. 29 Monday.....Enrolment in classes by the various Professors begins at 9.00 a.m.
Sept. 29 Monday.....Meeting of the Council of the Faculty of Arts.
Sept. 30 Tuesday.....Academic Year begins at 9.00 a.m.
Sept. 30 Tuesday.....The opening address by the President to the students of all the Faculties at 3 p.m., in Convocation Hall.
Sept. 30 Tuesday.....Last day for the completion of registration in person for the Session 1919-1920.
Sept. 30 Tuesday.....Enrolment in classes for the Session 1919-1920 to be completed at 5 p.m.
Oct. 1 Wednesday...Lectures begin at 9.00 a.m.
Oct. 1 Wednesday...Meeting of the Faculty of Arts of Victoria College.
Oct. 3 Friday.....Meeting of University College Council.
Oct. 3 Friday.....Meeting of the Senate of Victoria College.
Oct. 6 Monday.....Meeting of the Council of the Faculty of Arts.
Oct. 9 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
Oct. 9 Thursday.....Charter Day, Victoria College.
Oct. 10 Friday.....Meeting of Senate.

Oct. 11 Saturday.....Stated meeting of the Caput to deal with requests as to social functions until Nov. 15.

Oct. 29 Wednesday...Meeting of the Faculty of Arts of Victoria College.

Oct. 31 Friday.....Meeting of the Senate of Victoria College.

Nov. 6 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.

Nov. 7 Friday.....Meeting of University College Council.

Nov. 10 Monday.....Meeting of the Council of the Faculty of Arts.

Nov. 14 Friday.....Meeting of Senate.

Nov. 19 Wednesday...Annual General Business Meeting of the Convocation of Trinity College.

Nov. 20 Thursday.....Annual General Meeting of the Corporation of Trinity College.

Nov. 26 Wednesday...Meeting of the Faculty of Arts of Victoria College.

Dec. 1 Monday.....Last day for receiving applications for the January Examinations in Arts.

Dec. 4 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.

Dec. 5 Friday.....Meeting of University College Council.

Dec. 5 Friday.....Meeting of the Senate of Victoria College.

Dec. 8 Monday.....Meeting of the Council of the Faculty of Arts.

Dec. 12 Friday.....Meeting of the Senate.

Dec. Monday-
15-19 Friday....Term Examinations.

Dec. 19 Friday.....Last day of Lectures. Term ends at 12 noon.

Dec. 19 Friday.....Railway certificates issued at 12 noon.

Dec. 25 Thursday.....University Buildings closed.

1920—Jan. 1 Thursday.....University Buildings closed.

Jan. 2 Friday.....Supplemental Examinations in Arts begin.

Jan. 2 Friday.....Meeting of the Faculty of Arts of Victoria College.

Jan. 2 Friday.....Meeting of University College Council.

Jan. 5 Monday.....Meeting of the Council of the Faculty of Arts.

Jan. 6 Tuesday.....Easter Term begins.

Jan. 8 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.

Jan. 9 Friday.....Assembly of the Students of all Faculties in Convocation Hall at 12.10 p.m.

Jan. 9 Friday.....Meeting of Senate.
Jan. 15 Thursday.....Inauguration Day, Trinity College.
Jan. 28 Wednesday...Meeting of the Faculty of Arts of Victoria College.
Feb. 5 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
Feb. 6 Friday.....Meeting of University College Council.
Feb. 6 Friday.....Meeting of the Senate of Victoria College.
Feb. 9 Monday.....Meeting of the Council of the Faculty of Arts.
Feb. 13 Friday.....Meeting of Senate.
Feb. 18 Wednesday...Ash Wednesday.
Feb. 25 Wednesday...Meeting of the Faculty of Arts of Victoria College.
Mar. 4 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
Mar. 5 Friday.....Meeting of University College Council.
Mar. 5 Friday.....Meeting of the Senate of Victoria College.
Mar. 8 Monday.....Meeting of the Council of the Faculty of Arts.
Mar. 12 Friday.....Meeting of Senate.
Mar. 15 Monday.....Last day for receiving applications for Annual Examinations in Arts and Law.
Mar. 31 Wednesday...Last day for submitting LL.B. theses.
Mar. 31 Wednesday...Meeting of the Faculty of Arts of Victoria College.
Apr. 2 Friday.....Meeting of University College Council.
Apr. 2 Friday.....Meeting of the Senate of Victoria College.
Apr. 2 Friday.....University Buildings closed.
Apr. 5 Monday.....Meeting of the Council of the Faculty of Arts.
Apr. 8 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
Apr. 9 Friday.....Meeting of Senate.
Apr. Monday-
19-23 Friday....Term Examinations.
Apr. 23 Friday.....Lectures in Arts end.
May 1 Saturday.....Annual Examinations in Arts, Law, Pharmacy, Music, and Agriculture begin.
May 1 Saturday. ....Last day for receiving applications for the Alexander Mackenzie Fellowships in Political Science.
May 1 Saturday. ....Last day for receiving applications for the June Examinations in Arts.
May 5 Wednesday...Meeting of the Faculty of Arts of Victoria College.

May 6 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
May 7 Friday.....Meeting of University College Council.
May 7 Friday.....Meeting of the Senate of Victoria College.
May 10 Monday.....Meeting of the Council of the Faculty of Arts.
May 14 Friday.....Meeting of Senate.
May 15 Saturday.....Last day for receiving applications from candidates for Junior Matriculation Scholarships.
May 24 Monday.....University Buildings closed.
May 26 Wednesday...Meeting of the Faculty of Arts of Victoria College.
June 1 Tuesday.....Last day for receiving applications for Fellowships.
June 2 Wednesday...Meeting of Senate.
June 4 Friday.....University Commencement.
June 10 Thursday.....Meeting of the Land, Finance and Executive Committee of Trinity College.
June 16 Wednesday...Senior Matriculation Examination begins.
July 1 Thursday.....University Buildings closed.

FACULTY OF FORESTRY
1919-1920

President.....Robert Alexander Falconer, Litt.D., LL.D.
Professor Emeritus.....Bernhard Eduard Fernow, LL.D.
Acting Dean.....Clifton Durant Howe, Ph.D.
Registrar.....James Brebner, B.A.
Librarian.....Hugh Hornby Langton, M.A.
Bursar.....Ferdinand Albert Mouré, Esq.

Francis Barclay Allan, M.A., Ph.D.,
Associate Professor of Organic Chemistry

Alfred Baker, M.A., LL.D., Toronto,
Professor of Mathematics

Ernest Waldemar Banting, B.A.Sc.,
Lecturer in Surveying

Benjamin Arthur Bensley, B.A., Ph.D., Columbia,
Professor of Zoology and Head of Department of Biology

Eli Franklin Burton, B.A., Cantab., Ph.D.,
Associate Professor of Physics

James Roy Cockburn, B.A.Sc., A.M. Can. Soc. C.E.,
Assistant Professor of Descriptive Geometry

Arthur Philemon Coleman, M.A., Ph.D., Breslau, F.R.S.
Professor of Geology

Samuel Rutherford Crerar, B.A.Sc., D.L.S.,
Lecturer in Surveying

Alfred Tennyson DeLury, M.A.,
Professor of Mathematics

Joseph Horace Faull, B.A., Ph.D., Harvard,
Associate Professor of Botany

Lachlan Gilchrist, M.A., Ph.D., Chicago,
Assistant Professor of Physics

Clifton Durant Howe, M.A., Vermont, Ph.D., Chicago,
Associate Professor of Forestry

Francis Boteler Kenrick, M.A., Ph.D., Leipzig,
Associate Professor of Chemistry

William Robert Lang, D.Sc., Glasgow,
Professor of Chemistry and Director of Chemical Laboratory

WILLIAM JAMES LOUDON, B.A.,
Professor of Mechanics

MICHAEL ALEXANDER MACKENZIE, M.A., M.A., Cantab.,
Professor of Mathematics

JOHN CUNNINGHAM MCLENNAN, PH.D., F.R.S.,
Professor of Physics and Director of the Physical Laboratory

HENRY ALLEN MCTAGGART, M.A., B.A., Cantab.,
Lecturer in Physics

JAMES MAVOR, PH.D., Toronto,
Professor of Political Economy

WILLIS NORMAN MILLAR, B.Sc., Pennsylvania, M.F., Yale,
Assistant Professor of Forestry

WILLIAM ARTHUR PARKS, B.A., PH.D.,
Professor of Palaeontology

ARTHUR LEONARD PARSONS, M.A., New York,
Assistant Professor of Mineralogy

JOHN SATTERLY, M.A., Cantab., D.Sc., London,
Assistant Professor of Physics and Assistant Director of Undergraduate Laboratory Work

LOUIS BEAUFORT STEWART, O.L.S., D.L.S.,
Professor of Surveying and Geodesy

EDMUND MURTON WALKER, B.A., M.B.,
Associate Professor of Zoology

THOMAS LEONARD WALKER, M.A., Queen's, PH.D., Leipzig,
Professor of Mineralogy and Petrography

JAMES HERBERT WHITE, M.A., B.Sc.F., Ph.D., Toronto,
Assistant Professor of Forestry

ENTRANCE REQUIREMENTS

For the Session 1919-20 candidates for the Degree must have passed the Junior Matriculation Examination of the University in English, History, Mathematics, and in three of Latin, Greek, German, French, Experimental Science (Physics and Chemistry). The pass standard in this examination is 40 per cent on each paper and 60 per cent on the average, except in English and Mathematics, in which 50 per cent will be required on each paper with 60 per cent in each subject.

Admission may also be secured by candidates who (1) possess a degree in Arts, not being an honorary degree, from any Canadian, British or American university of approved standing; (2) come from other institu-

tions whose certificates are recognised by the University of Toronto as equivalent to the above entrance requirements, and will be accepted *pro tanto;* or (3) have completed a year, or the examinations for the year, with satisfactory standing, in the Faculties of Arts, Applied Science, or Medicine.

Applications for admission upon other than these examinations or certificates, and for advanced standing will be considered by the Faculty.

In addition to the academic requirements, a robust physique and good eyesight are essential in the practice of the profession, and candidates markedly deficient in these will be advised not to proceed. Deficiency in eyesight will be found a particular handicap in future practical employment.

Persons, not candidates for a degree, who are not less than 21 years of age, and who give evidence of sufficient ability, and especially of practical experience, to enable them to carry on with profit University courses in the subjects of the Faculty, although partly deficient in the regular matriculation requirements, may be admitted by the Faculty as *Non-Matriculated Students* on such conditions as the Faculty may determine. Such students may be required to complete matriculation and qualify for the degree within a prescribed period of time.

Occasional Students may be admitted to not more than three forestry subjects.

REGISTRATION AND ENROLMENT

Students may register with the Registrar of the University (from whom registration forms may be had) by letter at any time before the opening of the session, and are advised to do so. Students registering for the first time must present evidence of their standing, preferably by mail, before personal registration.

Students must complete their registration in person on or before the first day of the session, September 30th. On the same or the preceding day students will enrol with the instructors in their various courses.

The last date for registration and enrolment for 1919 is September 30th; lectures begin on October 1st.

Students who have not complied with the regulations for registration and enrolment may be admitted only upon petition to the Faculty and for good reasons. They may be refused enrolment with classes unless the head of the department is satisfied that they are able to go on with the class. A charge will be made for late registration.

No student will be allowed to continue who does not attend regularly, who wilfully disobeys rules and regulations, or whose presence is otherwise considered prejudicial to the interests of the University.

FEES

Regular Students in Forestry

First, Second, Third and Fourth Years. Annual fee, including instruction, main library, laboratory supply, and one annual examination, $80.00.

Combined Courses in Forestry and Arts

First, Second and Third Years. Annual fee, including College and University instruction, main library, laboratory supply, and one annual examination, $70.00. Of this fee $30.00 is to be paid for enrolment in one of the Colleges.

Fourth, Fifth and Sixth Years. Annual fee, including University instruction, main library, laboratory supply, and one annual examination, $70.00.

The fees are to be paid to the Bursar of the University in advance, one-half in the month of October, and the other half in the month of January. An additional fee of $1.00 per month will be imposed until the whole amount is paid, but in no case will the payment be allowed to be deferred more than two months.

The usual contingent deposits for covering breakages, etc., in the laboratories will be required by the departments concerned.

Occasional Students

The fee for occasional students is $5.00 for the term for each course taken.

General Fees

Annual deposit for the departmental library.....	$ 1.00
Supplemental Examinations.....	$10.00
Admission ad eundem statum.....	$10.00
Degree of B.Sc.F.....	$10.00

To defray expenses in the fall practice work and spring nursery work, a deposit not to exceed $50.00 will be required from Third and Fourth Year students alternate years.

Students' Council Fee

The Annual Fee..... $10.00

Every male student in attendance, proceeding to the Degree of Bachelor of Forestry, is required to pay to the Bursar at the time of the entry of his name with the Secretary the Annual Fee of ten dollars for the maintenance of the Council of the Undergraduates.

DEGREES

The satisfactory completion of the four-year course leads to the degree of Bachelor of the Science of Forestry (B.Sc.F.).

Graduates holding the degree of B.Sc.F., upon furnishing evidence of three years' practical employment in forestry work and the presentation of an acceptable thesis, the subject to be approved by the Faculty, will be given the degree of Forest Engineer (F.E.).

SIX-YEAR COURSE

Besides the regular four-year course to which the above requirements and degrees refer, there is offered a six-year course, combining with the regular four-year course certain humanistic and arts subjects, this combination being intended to give a broader education than can be attained by the shorter, purely professional course. This course leads to degrees in both Arts and Forestry at the end of the six years.

Entrance to this course is secured by the same matriculation as is prescribed for the Faculty of Arts, namely, in the following subjects: Latin, English, History, Mathematics, and any two of the following: Greek, German, French, Experimental Science, preferably two languages, one of which German, since the professional literature is chiefly in that language.

PHYSICAL TRAINING

By order of the Board of Governors each male student proceeding to a degree must take Physical Training in the first and second years of his attendance. He must first undergo a medical examination by the Physical Director of the University in order to determine the character of his training.

EXAMINATIONS AND STANDING

No student will be allowed to write on the annual examination who has not paid all fees and dues for which he is liable. A student who fails to perform the work in his course in a manner satisfactory to his instructors will not be allowed to present himself at the final examinations except by special permission of the Council.

The standard for pass in these examinations in all courses, whether taken in the Faculty of Forestry or any other Faculty, is 50 per cent of the marks for each subject. For students in the six-year course this has reference only to subjects in common with the regular course.

In making up the final standing of each candidate much consideration will be given to the character of his work through the term, including attendance, laboratory and field work, reports and term examinations.

Candidates who *fail* at the annual examinations *in more than two subjects*, of which *only one may be a forestry or biology subject*, cannot proceed to the next year unless they have attained at least 70 per cent on the average in all other subjects, when their case will be specially considered.

Candidates who fail in one or two subjects at the annual examinations, only one of which may be a forestry or biology subject, may be allowed to take supplemental examinations in such subjects. These supplemental examinations must be taken in Arts subjects in September at dates set by the Faculty of Arts, in forestry subjects before December 15th. Students who are prevented by fieldwork or by sickness from writing in September may be permitted to write in January.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the date of supplemental examinations, notice in writing of their intention to take such examinations, and at the same time the fee of $10 must be paid to the Bursar, and no student will be allowed to write who has failed to pay this fee.

If a candidate fail to pass a supplemental examination in a subject which is not basic to other subjects, he may carry it upon petition until the next examination, but if it be a subject fundamental to a subject of the year to which he wishes to advance he must take the subject over again (and if he fail in any three subjects he will be obliged to repeat the year). A student failing in laboratory work must repeat the same.

No candidate for a degree will be allowed to pass into the next higher year who has not fulfilled all the requirements of the next lower year.

PLAN OF INSTRUCTION

The regular course leading to the degree of Bachelor of the Science of Forestry is a four-year course, the first two years of which are mainly devoted to the study of the fundamental subjects. The last two years are mainly occupied with forestry subjects, there being also time allowed, especially in the last year, to add general educational subjects and to specialize in different directions under advice of the Dean.

Students are advised, as an option, to secure a reading and speaking knowledge of French.

The courses are distributed through the four years as follows:—

Note.—Numbers after the subjects refer to numbers of the courses as designated in the Calendars of the Faculties of Arts and Forestry. Where no numbers are given an option by consultation with the Dean is intended.

I YEAR

1. Mathematics:

   Algebra, Plane Trigonometry, Analytical Geometry (1, 4, 6, or 3, 5, 7). Three hours through the session.

2. Physics:

   Elementary Physics (9 and 10). Two hours and one afternoon through the session.

3. Chemistry:

   Elementary Chemistry (1, 14). Two hours and one afternoon through the session.

4. Biology:

   a. *Elementary Biology* (1). Two hours through the second term.

   b. *Elementary Botany* (3, 4). Two hours and two afternoons through the first term.

5. Forestry:

   a. *Synoptical Course* (1). One hour through the session.

   b. *Forest Botany* (2*a*). One lecture, two laboratory hours and field-work through the first and four hours through the second term.

6. ***German.*** Three hours through the session.
   [***French.*** Two hours through the session.]

SUMMER WORK

7. Botanical Collection (10).

II YEAR

1. Chemistry:

   Elementary Organic Chemistry (3*b*). Two hours through the first term.

2. Geology:

   a. *Elementary Geology* (2*a*). Two lectures a week through the session on Geology, Mineralogy and Petrography.

   b. *Geological Excursions.* Three excursions in the beginning of the session.

   c. *Practical Mineralogy and Petrography.* Two hours a week through the first term, one hour a week through the second term.

3. ***Surveying, Plane, and Map Drawing.*** One lecture, and two afternoons through the session.

4. Forestry:
   a. *Forest Mensuration* (8). Two hours and one day field or laboratory work through the session.
   b. *Forest Botany* (2*b*). Two hours through the session.
   c. *Biological Dendrology* (6). Two hours and two laboratory periods through the session.
5. *German.* Two or three hours.
   [*French.* Two hours.]

SUMMER WORK

6. Employment on *Forest Survey.*

III YEAR

1. Geology:
   Glacial Geology and Physiography (10). One hour through the session.
2. Biology:
   Economic Entomology (33), including Elementary Systematic Entomology. Fifty hours lecture and laboratory work through the second term.
3. *Surveying, Topographical, and Map Drawing.* One lecture and three afternoons or one day through the session.
4. Forestry:
   a. *Silviculture* (7). Three hours through the session and occasional field excursions as practicable; one week at nurseries. (This course alternates with course Forestry 12, and will not be given during the session 1919-20.)
   b. *Forest Geography* (3). Two hours through the session.
   c. *Forest Utilization and Forest Engineering* (9). Two hours through the session and occasional visits to woodworking establishments.
   d. *Timber Physics and Wood Technology* (4). One hour and two laboratory periods through the second term.
5. *German.* Two or three hours through the session.

IV YEAR

1. Chemistry:
   Applied Chemistry (12). One hour through the session.

2. Biology:
   a. *Plant Pathology* (21 in part). Fifty hours lecture and laboratory work.
   b. *Diseases of Trees* (5). A short lecture course. The two subjects (a & b) occupy the equivalent of two hours and one laboratory period through the second term.

3. Political Economy:
   a. *A General Introduction to the Study of Political Economy* (3). Fifty hours.
   b. *Commercial Law* (33). Twenty-five hours.

4. Forestry:
   a. *Forest Organization* (12). Three hours through the session.
   b. *Forest Valuation and Finance* (13). One hour through the session.
   c. *History of Forestry* (14). One hour through the session.
   d. *Forest Administration and Business Methods* (15, 10). One hour through the session.
   e. *Forest Protection* (11). One hour through the session.
   f. *Seminary in Silvicultural Literature* (16). One hour through the session.

In the Fourth Year considerable time is left open for electives, which may be used either for specializing in various directions, for adding generally cultural subjects, or for supplementing in forestry subjects in which the student feels himself deficient. At least four hours of electives in addition to the prescribed schedule must be taken under direction of the Dean. Courses suggested are Ethics, History of Philosophy, History of Nineteenth Century, Political Economy, Nineteenth Century Literature, Photography. In addition, practice work in Surveying will be arranged.

SPECIAL LECTURE COURSES

Short lecture courses by specialists for third and fourth year students may be provided on the following topics:—

1. Administration of Timber Limits in Canada
2. Business Methods of Lumber Trade
3. Diseases of Trees and Preservation of Wood

4. Problems of Prairie Planting and Farm Forestry
5. Fish Culture and Game Preservation
6. Development of the Lumber Industry and Lumbering Methods
7. Canadian Forest Policy and allied subjects
8. First Aid, etc.
9. Pack Equipment and Transportation

FIELD WORK

Arrangements will be made with lumbermen to permit third and fourth year students to spend a week or ten days of the Christmas vacation in lumber camps for the purpose of becoming acquainted with the methods of their management. A report on the results of such inspection visits will be required.

Four to five weeks at the beginning of the session will be spent in alternate years by the students of the third and fourth years with instructors in one of the Government Forest Reserves or in private camps for practice work. During this time timber estimating, tree measurements, studies of rate of growth, forest description and forest survey, for the making of working plans, and other practical woods work will occupy the students. (Practice camp will not be held in the session 1919-20.)

At or near the end of the spring term in alternate years, the government nurseries will be visited for a week, for practice in nursery work and planting.

This work forms an integral part of the course and constitutes a requirement for the degree.

Extra expenses for such excursions, not to exceed $60 in any one year, will have to be provided for by the student.

By special arrangement with the authorities of the Yale Forest School, at New Haven, Connecticut, graduates from this Faculty will be allowed to participate in the Course on Logging given by Professor Bryant in the field during the spring term on the same terms as the Yale students.

SCHEDULE FOR SIX-YEAR COURSE

Combined Forestry and Arts

This schedule may, with the concurrence of the Faculties concerned, be varied in order to meet the exigencies of the time-table.

First Year

Latin, 1*a*.
English, 1*a*, 1*b*.
German, 1*a*.
French, 1*a*.
Mathematics, 1, 4, 6, *or* 3, 5, 7.
Mechanics, 1 and Physics, 1, 2, *or* 9, 10.
Zoology, 5, 6.
Forestry, 1.
One of Greek and Roman History, 1; *or* Religious Knowledge, 1*a*, *or* 1*b*, *or* 1*c*.

Second Year

English, 2*a*, 2*b*.
German, 2*a*.
French, 2*a*.
History, 2*a*.
Botany, 3, 4, 10.
Chemistry, 1, 14.
One of Latin, 2*a* *or* Physics, 3.
Forestry, 2*a*.
One of Religious Knowledge, 2*a*, *or* 2*b*, *or* 2*c*, *or* 2*d*; *or* Geology, 1.

Third Year

English, 3*a*, 3*b*.
German, 3*a*.
French, 3*a*.
Chemistry, 3*a*.
Mathematics, 12, *or* Actuarial Science.
Geology and Mineralogy (*see* this Calendar, p. 15).
Botany, 5, 9.
Surveying, Plane, and Map Drawing.
Forestry, 2*b*, 8.
One of Religious Knowledge, 3*a*, *or* 3*b*, *or* 3*c*, *or* 3*d*, *or* 3*e*, *or* World History, 1.

Fourth Year

Geology and Physiography, 10.
Surveying, Topographical and Map Drawing.
History, 4*a*.
Chemistry, 4 *or* 7; *or* Physics, 4, 5, or Philosophy, 1.
Forestry, 6, 9.
Extra Field Work, 4 weeks.
One of Religious Knowledge, 4*a*, *or* 4*b*, *or* 4*c*, *or* 4*d*, *or* 4*e*, *or* World History, 2.

Fifth Year

English, 4*a*, 4*b*.
Political Economy, 1, 3.
Law, 4.
One of Philosophy (23), *or* Science.
Zoology, 34.
Forestry, 3, 4, 5, 7, 11
Extra Field Work, 4 weeks.

Sixth Year

Chemistry, 12.
Political Economy, 33.
Engineering.
Philosophy.
Forestry, 10, 12, 13, 14, 15, 16.

DESCRIPTION OF FORESTRY COURSES

1. *Synoptical Course.* An introduction to the subject of forestry and a survey of the economic and political aspects of timber land management. This course, carried on in seminary style, is designed also for students of

political economy and all those who desire a general knowledge of forestry problems. 25 hours.

2. *Forest Botany.* A taxonomic study (2*a*) of the forest trees (dendrology) and (2*b*) of the minor forest flora of North America and forage plants, laying special stress on the characteristics which lead to the recognition of the species in the field, with practice work in securing familiarity with morphological and other characteristics for identifying Canadian and exotic trees and shrubs, tree seeds and seedlings. 150 hours and field work.

3. *Forest Geography.* The geographical distribution, botanical composition and character of forests of the world, and of North America in particular, with special reference to the ecological factors, climate and soil, influencing forest growth. Field practice in recognizing forest types and in making forest descriptions. 50 hours.

4. *Timber Physics and Wood Technology.* Study of the histology of wood with a view to identification of the different woods, recognition of their normal and abnormal physical characteristics and defects. Mechanical and technical properties of wood and the various technological uses dependent thereon. Lectures and laboratory work. 75 hours.

5. *Pathology of Trees and Wood.* The diseases of trees and decay of structural timber, their recognition, causes and prevention. 25 hours.

6. *Biological Dendrology.* Life history, laws of growth of trees, their dependence on ecological factors and silvicultural requirements of different species. 125 hours.

7. *Silviculture.* Principles and practice of the art of forest production and forest improvement, nursery practice, planting, and methods of natural reproduction. 75 hours. Practice work in addition.

8. *Forest Mensuration.* Methods of ascertaining volume of felled and standing trees, of whole forest growths, timber estimating, determining increment of trees and stands. 100 hours, including practice work.

9. *Forest Utilization and Forest Engineering.* Methods and means employed in the harvesting of forest products, logging, transportation, milling, preparation for market, and engineering problems. 100 hours, including visits to manufacturing plants.

10. *Business Methods in the Lumber Trade.* Description of usages in shipping, receiving and selling forest products; inspection and grading; financial methods. 10 hours.

11. *Forest Protection.* Methods of guarding against trespass, loss from fires, insects (applied entomology) and other damage to forest crops. 25 hours.

12. *Forest Organization.* Principles and methods underlying the preparation of working plans for continuous wood and revenue production. 75 hours.

13. *Forest Valuation and Finance.* Methods of ascertaining money value of forest growths and application of the principles of finance to forest management. 25 hours.

14. *History of Forestry.* Historical development of the economic and technical features of modern forestry at home and abroad. 25 hours.

15. *Forest Administration.* Principles and methods employed in the administration of forest properties. 25 hours.

16. *Seminary in Forestry Literature.* Reading from prominent authors, especially in silviculture. 25 hours.

OPENINGS FOR FORESTERS

To meet the many inquiries of students contemplating the choice of forestry as a profession—a profession still largely unknown and unpractised in Canada—the following statements may serve:

Openings for foresters may be found in four or five directions, namely, government employ, private employ, private enterprise, teaching, other business.

The Dominion Forestry Branch, which has charge of the Dominion timber lands in Alberta, Saskatchewan, Manitoba, part of British Columbia, and the unorganized territories, is employing graduates to do the technical work in exploring and classifying lands for forest reservations, surveying, mapping and determining contents of such reservations, organizing a forest fire service, controlling the grazing, timber sales and logging, and generally providing for an administration of forest reservations, of which there are now a dozen, under supervisors. These will have to work out the details of a forest management.

The Forestry Branch maintains large nurseries from which plant material is distributed for planting in the prairies; a staff of experts attend to the growing and distribution of plants, and inspect the planting.

Other field work consists in silvicultural investigations.

Statistical and technological investigations are carried on and results published at the main office in Ottawa and its Forest Products Laboratories at Montreal.

Besides the permanent employment for graduates, undergraduates find their services required for the summer season as assistants.

Such summer work is also offered by the Commission of Conservation.

Salaries for graduates run, at present, from $1200 upwards; for undergraduates, $45 to $75 per month, according to experience.

During the summer of 1912, the British Columbia government instituted a full-sized Forest Branch, requiring a large staff of professional men, to do similar work to that of the Dominion Branch.

The Province of Ontario has entered the field of employment of professional foresters by the appointment of a Provincial Forester, and some development requiring assistants may be looked forward to.

The Quebec government has for some time organized and developed a forest service, providing its technical men in its own way.

Private employment has been developed in several directions. The Canadian Pacific Railway Company maintains a staff of foresters, mainly investigating timber conditions on their holdings, but eventually, no doubt, will also administer the same as forest properties for tie purposes, and otherwise.

A number of paper manufacturing companies have for some years availed themselves of the services of foresters, to survey, map, and plan operations of their forest properties. Timber limit holders have employed such for similar purposes, and the time cannot be far distant when there will be a more general development in this direction.

At least one firm of consulting forest engineers has found for several years most lucrative business, employing a number of assistants. In the United States about half a dozen such firms are operating. Some of these are doing work in Canada.

As the need for professional men is growing, it is to be expected that additional educational facilities will be provided and additional teachers will be wanted, furnishing openings to a few.

Altogether, however, it needs to be understood that there will always be only a limited demand for high grade professional men, at least for some time to come; and only those with a special love and aptitude for the arduous work which is largely involved should enter the profession.

Besides the directions above outlined as offering employment for foresters, the education of foresters is such as to prepare them for shifting readily into other employment, such as park superintendents, landscape architects, nursery work, horticulture, lumberman's business in its various phases, etc.

ROYAL ONTARIO MUSEUM

Archaeology, Geology, Mineralogy, Palaeontology, Zoology

Students of the University in all departments are recommended to avail themselves of the privileges of the Museum, which, although under separate control, is intimately connected with the work of the University.

The Museum is open on all week days from 10 a.m. to 5 p.m. The Admission is free to the public on Tuesday, Thursday and Saturday. On other days an admission fee of fifteen cents is charged.

By a resolution of the Board of Trustees all regular students of the University may be admitted free on all days of the week by presenting their card of registration.

UNIVERSITY OF TORONTO

Residence for Men

By the generosity of Mr. and Mrs. E. C. Whitney and other friends, the University can now offer to some hundred and fifty men the peculiar advantages of residential life and excellent accommodation within its own grounds. The Residence, opened in November, 1908, consists of three Houses situated on the north side of Hoskin Avenue, opening upon a quadrangle, the fourth side of which is formed by Devonshire Place. They stand about two hundred yards to the north of University College and of the University Dining Hall and close to the University Gymnasium and Athletic Field. The buildings are known as the South, East and North Houses.

Each House contains twenty-four single rooms, one single suite, one double room and eleven suites, a suite comprising a study and two bedrooms. A large room in each building, with an open hearth and a library, has been set aside as a common room. A lavatory with hot and cold shower baths is provided for every eight men. The buildings are heated by steam and lighted by electricity.

The University supplies the table, chairs, bookcase, chiffonier, bed, mattress, pillows, linen and window shades for each room; it is prepared to furnish a drop-light for a nominal rental.

Each occupant is charged $3.00 room-rent per week, payable to the Bursar four weeks in advance. The charge for each single suite is $4.00 per week. These charges cover heat, light, house-service, house-laundry, and the use of the telephone. There is no separate dining hall connected with the Residence, but board may be obtained at the adjacent University Dining Hall for $4.50 per week.

Applications for rooms must be made in writing to the Secretary of the Residence Committee (address the Registrar's Office) and must be accompanied by a deposit of $5.00. This deposit will be returned if the application be not granted, but will be forfeited if a room is assigned to the applicant and not taken by him, unless notice of his refusal of the room be received by the Secretary in writing before September 22nd. It will be returned in full at the end of the College year if the room key be given back and the room and furniture left in a satisfactory condition. The following principles govern the allotment of rooms: (i) In order to be assigned a room in the Residence, either before or during the Session, a student must have obtained standing at the previous spring examinations with not more than one condition against him; (ii) The rooms in each House will be distributed proportionately between the various Faculties and Years;

(iii) A limited number of rooms will be reserved for members of the incoming First Year until September 18th; (iv) Applications will be considered in order of priority.

The University lays down three general rules, designed to prevent hazing, the use of intoxicants and gambling. The students in each House shall elect a House Committee, which is entrusted by the University with the making and enforcing of any other needed rules and with the maintenance of order. A member of the Faculty resides in each House to act as friend and adviser to the men in residence.

GRADUATES

Name	Date of Graduation	Employment
White, J. H., M.A., Ph.D.	'09	U.T.
Dwight, T. W.	'10	D.
*Edgecombe, G. H., B.Sc.	'10	
Cameron, D. R., B.A.	'11	D.
*Ellis, L. M.	'11	
Gilmour, J. D., B.Sc.A.	'11	P.
*McDougall, E. G., B.A.	'11	Ont.
Sadler, S. S., B.S.	'11	
Brown, R. M.	'12	D.
Edgar, F. G.	'12	
Finlayson, E. H.	'12	D.
Irwin, H. S.	'12	B.C.
*Lewis, R. G.	'12	D.
McFayden, C.	'12	D.
Manning, E. C.	'12	D.
*Scandrett, W. L.	'12	
*Tilt, L. C.	'12	
VanDusen, W. J.	'12	B.C.
*Andrews, L. R.	'13	
*Bothwell, G. E. (deceased)	'13	
*Christie, H. R.	'13	
Clark, S. H.	'13	
*McVickar, F	'13	B.C.
*Morton, B. R.	'13	D.
*Newman, F. S.	'13	
*Parlow, A. E.	'13	D.
Tunstell, G.	'13	D.
Campbell, R. L., B.A.	'14	P.
*Chamberlin, J. R. (deceased)	'14	
Connell, A. B.	'14	D.
*Davison, E. S.	'14	
Kynoch, W.	'14	D.
*Robertson, F. B. (deceased)	'14	
Smith, G. S.	'14	D.
*Delahey, W. A.	'15	
*Morse, C. H.	'15	D.
Prowd, E. B.	'15	B.C.
Rance, T. F.	'15	
*Simmons, J. L.	'15	
Sloan, J. M.	'15	
*Trebilcock, J. A. (deceased)	'15	
*Boyd, W. J.	'16	
*Dallyn, G. M.	'16	

Name	Date of Graduation	Employment
*Gilbert, A. V., B.A.	'16	
*Gill, C. B., B.A.	'16	
Greig, D.	'16	
Lyons, R. W.	'16	P.
*McEwen, P.	'16	
*Porteous, H. A.	'16	
*Johnston, R. N	'17	
McCallum, A. W., M.A.	'17	U.T.
Nieuwejaar, O.	'17	
*Courtnage, R. A.	'18	D.
Mulloy, G. A.	'18	C. of C.
*Kay, J.	'19	D.
*Linton, G. M.	'19	
Robertson, W. M.	'19	C. of C.

*Enlisted for Overseas Service.

U.T. = University of Toronto. D. = Dominion Forestry Branch. Ont. = Ontario Department of Lands, Forests, and Mines. B.C. = British Columbia Forest Branch. C.P.R. = Canadian Pacific Railway Company. C. of C. = Commission of Conservation. P. = Private.

WAR CASUALTIES

James Douglas Aiken	'16
Charles Laidlaw Anderson	'18
George Edward Bothwell, B.Sc.F.	'13
George Gilbert Bricker	'18
Robert Alexander Rankine Campbell	'15
James Russell Chamberlin, B.Sc.F.	'14
Albert Edward Cugner, B.A.	'18
Kenneth Brown Downie	'20
Harold Sylvester Edmonds, M.C.	'18
Alister Munro Mackenzie	'13
Ronald Mackenzie Richards	'16
Frank Bruce Robertson, B.Sc.F.	'15
Frederic Gustavus Stupart	'18
Arnold Monroe Thurston	'16
John Archibald Trebilcock, B.Sc.F., M.C.	'18

The Roll of Service

The first edition of the official Roll of Service of the University was published in December 1917, and a supplement has recently been issued, containing new names, and additions and corrections regarding those already recorded. A final and enlarged edition is now being prepared, and the readers of this Calendar can give valuable assistance if they will send in memoranda concerning their friends, giving full details. Communications should be addressed to the Editor, The Roll of Service, University of Toronto.

A limited number of copies of the Roll and supplement are still available for distribution to applicants, free of charge.

THE

CALENDAR

OF THE

University of Toronto

FACULTY OF MEDICINE

1919-1920

UNIVERSITY OF TORONTO PRESS

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JANUARY

Sun.	. .	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

FEBRUARY

Sun.	. 2	9	16	23	..	
Mon.	. 3	10	17	24	..	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	..	..

MARCH

Sun.	. 2	9	16	23	30	
Mon.	. 3	10	17	24	31	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	29	..

APRIL

Sun.	. .	6	13	20	27	
Mon.	. .	7	14	21	28	
Tues.	. 1	8	15	22	29	
Wed.	. 2	9	16	23	30	
Thur.	. 3	10	17	24	..	
Fri.	. 4	11	18	25	..	
Sat.	. 5	12	19	26	..	

MAY

Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
Thur.	. 1	8	15	22	29	
Fri.	. 2	9	16	23	30	
Sat.	. 3	10	17	24	31	

JUNE

Sun.	. 1	8	15	22	29	
Mon.	. 2	9	16	23	30	
Tues.	. 3	10	17	24	..	
Wed.	. 4	11	18	25	..	
Thur.	. 5	12	19	26	..	
Fri.	. 6	13	20	27	..	
Sat.	. 7	14	21	28	..	

JULY

Sun.	. 2	9	16	23	30	
Mon.	. 3	10	17	24	31	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	29	..

AUGUST

Sun.	. 3	10	17	24	31	
Mon.	. 4	11	18	25	..	
Tues.	. 5	12	19	26	..	
Wed.	. 6	13	20	27	..	
Thur.	. 7	14	21	28	..	
Fri.	1	8	15	22	29	..
Sat.	2	9	16	23	30	..

SEPTEMBER

Sun.	. .	7	14	21	28	
Mon.	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	..	
Thur.	. 4	11	18	25	..	
Fri.	. 5	12	19	26	..	
Sat.	. 6	13	20	27	..	

OCTOBER

Sun.	.	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

NOVEMBER

Sun.	. 2	9	16	23	30	
Mon.	. 3	10	17	24	..	
Tues.	. 4	11	18	25	..	
Wed.	. 5	12	19	26	..	
Thur.	. 6	13	20	27	..	
Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	29	..

DECEMBER

Sun.	. .	7	14	21	28	
Mon.	. 1	8	15	22	29	
Tues.	. 2	9	16	23	30	
Wed.	. 3	10	17	24	31	
Thur.	. 4	11	18	25	..	
Fri.	. 5	12	19	26	..	
Sat.	. 6	13	20	27	..	

1920 CALENDAR 1920

JANUARY

Sun.	. .	4	11	18	25	
Mon.	. .	5	12	19	26	
Tues.	. .	6	13	20	27	
Wed.	. .	7	14	21	28	
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Sun.	. .	7	14	21	28	
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Wed.	. 3	10	17	24	31	
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Fri.	. .	5	12	19	26	..
Sat.	. 6	13	20	27	.	

APRIL

Sun.	. .	4	11	18	25	
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Tues.	. .	6	13	20	27	
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MAY

Sun.	. 2	9	16	23	30	
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Fri.	. 7	14	21	28	..	
Sat.	1	8	15	22	29	..

JUNE

Sun.	. .	6	13	20	27	
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Fri.	. 1	8	15	22	29	..
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Thur.	. 4	11	18	25	..	
Fri.	. 5	12	19	26	..	
Sat.	. 6	13	20	27	..	

DECEMBER

Sun.	. .	5	12	19	26	
Mon.	. .	6	13	20	27	
Tues.	. .	7	14	21	28	
Wed.	. 1	8	15	22	29	
Thur.	. 2	9	16	23	30	
Fri.	. 3	10	17	24	31	
Sat.	. 4	11	18	25	..	

CALENDAR 1919-1920.

1919—Sept. 1 Monday.....Last day for receiving applications for the September Examinations in Medicine.
Sept. 9 Tuesday.....Supplemental Examinations in Medicine begin.
Sept. 15 Monday.....Registration in Medicine by the Secretary of the Faculty of Medicine.
Sept. 19 Friday.....Meeting of the Council of the Faculty of Medicine.
Sept. 30 Tuesday.....Academic Year begins at 9 a.m.
Sept. 30 Tuesday.....Enrolment in classes by the various Professors.
Sept. 30 Tuesday.....The Opening Address by the President to the Students of all the Faculties at 3 p.m. in Convocation Hall.
Oct. 3 Friday.....Meeting of the Council of the Faculty of Medicine.
Oct. 10 Friday.....Meeting of Senate.
Oct. 11 Saturday.....Stated meeting of the Caput to deal with requests as to social functions until Nov. 15.
Nov. 7 Friday.....Meeting of Senate.
Dec. 5 Friday.....Meeting of the Council of the Faculty of Medicine.
Dec. 12 Friday.....Meeting of Senate.
Dec. 19 Friday.....Last day of Lectures. Term ends at 12 noon.
Dec. 19 Friday.....Railway certificates issued at 12 noon.
Dec. 25 Thursday.....University Buildings closed.

1920—Jan. 1 Thursday.....University Buildings closed.
Jan. 6 Tuesday.....Easter Term begins.
Jan. 9 Friday.....Assemblage of the Students of all the Faculties in Convocation Hall at 12.10 p.m.
Jan. 9 Friday.....Meeting of Senate.
Feb. 6 Friday.....Meeting of the Council of the Faculty of Medicine.
Feb. 13 Friday.....Meeting of Senate.
Feb. 18 Wednesday....Ash Wednesday.
Mar. 12 Friday.....Meeting of Senate.

1920—Mar. 15 Monday.....Last day for receiving applications for Annual Examinations in Medicine.
April 1 Thursday.....Meeting of Senate.
April 2 Friday.....University Buildings closed.
April 9 Friday.....Meeting of the Council of the Faculty of Medicine.
May 10 Monday.....Annual Examinations in Medicine begin.
May 24 Monday.....University Buildings closed.
May 31 Monday .....Medical Session ends.
June 4 Friday.....University Commencement.
June 11 Friday.....Meeting of Senate.
July 1 Thursday.....University Buildings closed.

ADMINISTRATIVE OFFICERS.

THE UNIVERSITY.

President....Robert Alexander Falconer, K.C.M.G., D.Litt., LL.D.
Registrar.....James Brebner, B.A.
Bursar.....Ferdinand Albert Mouré, Esq.
Librarian.....Hugh Hornby Langton, M.A.

Directors of the Museum:

Prof. C. T. Currelly, M.A.
Director of Archaeological Section.
Prof. A. P. Coleman, M.A., Ph.D., Breslau, F.R.S.
Director of Geology.
Prof. W. A. Parks, Ph.D.
Director of Palaeontology.
Prof. T. L. Walker, M.A., Queen's, Ph.D., Leipzig.
Director of Mineralogy.
Prof. B. A. Bensley, B.A., Ph.D.
Director of Zoology.

Physical Director.....James Warren Barton, M.D.
Superintendents of Buildings and Grounds,
Colin Graham Campbell, B.A., M.B., C.M.
Arthur D'Orr Le Pan, B.A.Sc.
Manager of the University of Toronto Press...Richard J. Hamilton, B.A.

FACULTY OF MEDICINE.

President....Robert Alexander Falconer, K.C.M.G., D.Litt., LL.D.
Dean.....C. K. Clarke, M.D., LL.D.
Secretary.....E. Stanley Ryerson, M.D., C.M.

Note—Communications relating to standing in all Faculties and Departments and to curricula, instruction and examinations in Graduate Courses, Law, Dentistry, Pharmacy, Agriculture, Music, Pedagogy, Gymnastics and Drill, Commerce and Veterinary Science are to be addressed to the Registrar of the University; correspondence regarding curricula, instruction and examinations in a particular Faculty is to be sent to the Secretary of that Faculty, while enquiries with reference to College instruction and residence are to be addressed to the Registrar of the College concerned.

UNIVERSITY OF TORONTO—FACULTY OF MEDICINE.

1919-1920.

President....ROBERT ALEXANDER FALCONER, K.C.M.G., D.LITT., LL.D.
Dean of Faculty.....CHARLES KIRK CLARKE, M.D., LL.D.
Secretary of the Faculty.....EDWARD STANLEY RYERSON, M.D., C.M.

Professores Emeriti.

MOSES HENRY AIKINS, B.A., M.D.
WILLIAM WINSLOW OGDEN, M.D.
JAMES ALGERNON TEMPLE, M.D., C.M., LL.D.
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LUKE TESKEY, M.D., C.M.
ADAM HENRY WRIGHT, B.A., M.D.
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Ophthalmologist, Hospital for Sick Children, 13 Bloor Street, West.

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Chief of Service in Gynaecology and Obstetrics, Western Hospital,
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Consulting Physician, Hospital for Sick Children,
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Physician, Hospital for Sick Children,
Cor. Elgin Avenue and Avenue Road.

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Professor of Medicine and Clinical Medicine,
Physician, Chief of Service, Toronto General Hospital,
Consulting Physician, Hospital for Sick Children,
151 Bloor Street, West.

WILLIAM LASH MILLER, B.A., Ph.D.,
Professor of Physical Chemistry, 50 St. Albans Street.

HAROLD CAMPBELL PARSONS, B.A., M.D., C.M., M.R.C.P., Lond.,
Associate in Clinical Medicine,
Assistant Physician in charge of Tuberculosis Clinic, Toronto General Hospital and Hospital for Sick Children.

WILLIAM HUNTER PIERSOL, B.A., M.B.,
Associate Professor of Histology and Embryology,
26 Albany Avenue.

NEWTON ALBERT POWELL, M.D., C.M., M.D., Bellevue, N.Y.,
Professor of Medical Jurisprudence and Associate Professor of Clinical Surgery,
Assistant Surgeon in charge of Emergency Department, Toronto General Hospital, 167 College Street.

ALEXANDER PRIMROSE, C.B., M.B., C.M., Edin.,
Professor of Clinical Surgery,
Surgeon, Chief of Service, Toronto General Hospital,
Consulting Surgeon, Hospital for Sick Children, 100 College Street.

A. C. REDFIELD, Ph.D. (Harvard),
Assistant Professor of Physiology Medical Building.

THOMAS BEDFORD RICHARDSON, M.D., C.M., F.R.C.S., Edin.,
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T. BRAILSFORD ROBERTSON, Ph.D., California D.Sc., Adelaide,
Professor of Biochemistry, 67 Queen's Park.

ROBERT DAWSON RUDOLF, C.O.B.E., M.D., C.M., F.R.C.P., Lond.,
Professor of Therapeutics,
Senior Assistant Physician, Toronto General Hospital,
302 Bloor Street, West.

EDWARD STANLEY RYERSON, M.D., C.M.,
Associate in Clinical Surgery,
Second Senior Assistant Surgeon, Toronto General Hospital,
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JOHN GERALD FITZGERALD, M.B.,
*JAMES MOFFATT FORSTER, M.B.,
JOHN TAYLOR FOTHERINGHAM, C.M.G., B.A., M.D., C.M.,
LACHLAN GILCHRIST, M.A., Ph.D.,
WILLIAM GOLDIE, M.B.,
*DUNCAN A. GRAHAM, M.B.,
F. A. HARTMAN, M.A., Ph.D.,
STEPHEN MOFFATT HAY, M.D.,
VELYIEN EWART HENDERSON, M.A., M.B.,
*W. B. HENDRY, D.S.O., B.A., M.B.,
*GOLDWIN WILLIAM HOWLAND, B.A., M.B., M.R.C.P. Lond.
ANDREW HUNTER, M.A., B.Sc., M.B., Ch.B., Edin.
*HENRY SEATON HUTCHISON, M.B.,
*C. G. IMRIE, M.D.,
*WILLIAM WARNER JONES, B.A., M.B., F.R.C.S. Eng.
FRANCIS BOTELER KENRICK, M.A., Ph.D.,

*Lecturers and instructors as indicated by the asterisk shall act as Assessors only and shall not be entitled to vote.

*J. A. KINNEAR, M.D., C.M.,
WILLIAM ROBERT LANG, D.Sc., F.I.S.,
JAMES METCALFE MACCALLUM, B.A., M.D.,
*WILLIAM JAMES MCCOLLUM, M.B.,
*DONALD MCGILLIVRAY, M.B.,
KENNEDY CRAWFORD MCILWRAITH, M.B.,
JOHN JAMES RICHARD MACLEOD, M.B., Ch.B. (Aber.), D.P.H. Camb.
JOHN JOSEPH MACKENZIE, B.A., M.B.,
PATRICK WALTER HUGHES MCKEOWN, B.A., M.B.,
JOHN CUNNINGHAM MCLENNAN, B.A., Ph.D., F.R.S., O.B.E.
JAMES PLAYFAIR MCMURRICH, M.A., Ph.D., LL.D.
ALEXANDER MCPHEDRAN, M.B.,
ALBERT ANGUS MACDONALD, M.B., L.R.C.P. and S. Edin.
HENRY THOMAS MACHELL, M.D.,
FREDERICK WILLIAM MARLOW, M.D., C.M., F.R.C.S. Eng.
WILLIAM LASH MILLER, Ph.D.,
HAROLD CAMPBELL PARSONS, B.A., M.D., C.M., M.R.C.P. Lond.
WILLIAM HUNTER PIERSOL, B.A., M.B.,
NEWTON ALBERT POWELL, M.D., C.M.,
ALEXANDER PRIMROSE, C.B., M.B., C.M.,
*THOMAS BEDFORD RICHARDSON, M.D., C.M., F.R.C.S. Edin.
T. BRAILSFORD ROBERTSON, Ph.D., D.Sc.,
ROBERT DAWSON RUDOLF, C.O.B.E., M.D., C.M., F.R.C.P. Lond.
*EDWARD STANLEY RYERSON, M.D., C.M.,
JOHN SATTERLY, M.A., Cantab., D.Sc., Lond.,
*WALLACE ARTHUR SCOTT, C.M.G., B.A., M.B., F.R.C.S. Eng.
*CHARLES BUCKINGHAM SHUTTLEWORTH, M.D., C.M., F.R.C.S. Eng.
*GIDEON SILVERTHORN, M.B.,
CLARENCE LESLIE STARR, M.B.,
FREDERIC NEWTON GISBORNE STARR, M.B.,
WILLIAM BROWN THISTLE, M.D.,
*JOHN FRANKLIN UREN, M.D., C.M.,
HARDOLPH WASTENEYS, Ph.D.
BENJAMIN PHILP WATSON, M.D., Ch.B., F.R.C.S. Edin.
*JAMES CRAWFORD WATT, M.A., M.D.,
EDMUND MURTON WALKER, B.A., M.B.,
DAVID JAMES GIBB WISHART, B.A., M.D., C.M.,
THE LIBRARIAN OF THE UNIVERSITY.

Secretary.....E. STANLEY RYERSON, M.D., C.M.

*Lecturers and instructors as indicated by the asterisk shall act as Assessors only and shall not be entitled to vote.

OFFICERS AND MEMBERS OF THE FACULTY SINCE ITS ORIGIN.

Deans.

W. T. Aikins, 1887-1893.
U. Ogden, 1893-1896.
R. A. Reeve, 1896-1908.
C. K. Clarke, 1908-

Secretaries.

Adam Wright, 1887-1893.
James Brebner, 1893-1894.
A. Primrose, 1894-1918.
E. Stanley Ryerson, 1918.

Assistant Secretaries.

J. J. Mackenzie, 1900-1908.
E. Stanley Ryerson, 1908-1918.

Chair of Medicine and Clinical Medicine.

Professors of Medicine.

H. H. Wright, 1887-1892.
J. E. Graham, 1887-1900.
A. McPhedran, 1900-

Professors of Clinical Medicine.

A. McPhedran, 1900-
J. L. Davison, 1903-1909.

Associate Professors of Medicine and Clinical Medicine.

A. McPhedran, 1892-1900.
J. T. Fotheringham, 1903-
R. D. Rudolf, 1903-1908.

Associate Professors of Clinical Medicine.

W. P. Caven, 1896-1913.
W. B. Thistle, 1900-
A. M. Baines, 1903-
A. R. Gordon, 1903-1916.
R. J. Dwyer, 1903-
H. B. Anderson, 1903-
Graham Chambers, 1908-
William Goldie, 1913-
John Ferguson, 1913-

Associate Professors of Paediatrics.

A. M. Baines, 1903-
H. T. Machell, 1903-

Chair of Surgery and Clinical Surgery.

Professor of Surgery.

W. T. Aikins, 1887-1897.

Professors of Surgery and Clinical Surgery.

I. H. Cameron, 1897-
F. LeM. Grasett, 1903-1909.
G. A. Peters, 1903-1907.
L. Teskey, 1903-1909.

Associate Professor of Surgery and Clinical Surgery.

G. A. Peters, 1892-1903.

Professor of Surgery and Surgical Pathology.

I. H. Cameron, 1887-1892.

Associate Professor of Clinical Surgery and Clinical Anatomy.

G. A. Bingham, 1903-

Professors of Clinical Surgery.

L. McFarlane, 1887-1896.
A. Primrose, 1918.
I. H. Cameron, 1892-1896.

Associate Professors of Clinical Surgery.

A. Primrose, 1897-1918.
B. Spencer, 1897-1903.
L. M. Sweetnam, 1897-1902.
H. A. Bruce, 1897-
W. Oldright, 1899-1910.
F. N. G. Starr, 1900-
C. L. Starr, 1903-
(In charge of Orthopaedics).
P. W. H. McKeown, 1908-
S. M. Hay, 1913-

Chair of Obstetrics.

Professor.

A. H. Wright, 1887-1912.

Associate Professors.

H. T. Machell, 1900-
F. Fenton, 1913-19.
K. C. McIlwraith, 1910-

Chair of Gynaecology.

Professors.

Uzziel Ogden, 1887-1903.
James F. W. Ross, 1903-1911.

Associate Professor.

James F. W. Ross, 1897-1903.

Professor of Operative Obstetrics and Gynaecology.

J. A. Temple, 1903-1909.

Chair of Obstetrics and Gynaecology.

Professor.

B. P. Watson, 1912-

Associate Professors of Gynaecology.

F. W. Marlow, 1913-

A. A. Macdonald, 1913-

Chair of Anatomy.

Professors.

J. H. Richardson, 1887-1896.

A. Primrose, 1896-1907.

J. Playfair McMurrich, 1907-

Associate Professors.

M. H. Aikins, 1887-1892.

A. Primrose, 1892-1896.

H. W. Aikins, 1896-1914.

Chair of Chemistry.

Professors.

W. H. Ellis, 1887-

W. H. Pike, 1888-1900.

W. R. Lang, 1900-

Associate Professors.

W. L. Miller, 1901-

F. B. Allan, 1907-

F. B. Kenrick, 1910-

Associate Professor of Medical Chemistry.

W. T. Stuart, 1903-1910.

Chair of Biology and Physiology.

Professor.

R. Ramsay Wright, 1887-1892.

Chair of Biology.

Professor.

R. Ramsay Wright, 1892-1912.

Professor of Zoology.

B. A. Bensley, 1914-

Associate Professors.

B. A. Bensley, 1906-1914.

W. H. Piersol, 1910-

Assistant Professor.

E. M. Walker, 1913-

Chair of Physiology.

Professors.

A. B. Macallum, 1890-1904. T. G. Brodie, 1909-1916.
J. J. R. McLeod, 1918.

Professor of Physiology and Physiological Chemistry:
A. B. Macallum, 1904-1909.

Chair of Biochemistry.

Professors.

A. B. Macallum, 1909-1917. T. Brailsford Robertson, 1918.

Chair of Pharmacology and Therapeutics.

Professors.
James Thorburn, M.D., Edin., 1887-1892.
James M. MacCallum, 1892-1908.

Associate Professor.
C. F. Heebner, 1900-1903.

Associate Professor of Pharmacy and Pharmacology.
V. E. Henderson, 1909-

Chair of Therapeutics.

Professor.
R. D. Rudolf, 1908-

Chair of Ophthalmology, Otology, Laryngology and Rhinology.

Professor.
R. A. Reeve, 1887-1903.

Chair of Ophthalmology and Otology.

Professors.

R. A. Reeve, 1903-1914. G. H. Burnham, 1903-
G. S. Ryerson, 1903-1918. J. M. MacCallum, 1914-

Associate Professors.

G. H. Burnham, 1896-1903. J. M. MacCallum, 1909-1914.
Chas. Trow, 1905-1911.

Chair of Oto-Laryngology.

Professors.

G. R. McDonagh, 1903-1914. D. J. Gibb Wishart, 1914-

Associate Professors.

G. R. McDonagh, 1896-1903. D. J. Gibb Wishart, 1903-1914.
Geoffrey Boyd, 1913-1918.

Chair of Hygiene and Sanitary Science.

Professors.

Wm. Oldright, 1887-1910. J. A. Amyot, 1910-

Associate Professor.

J. G. Fitzgerald, 1913-

Chair of Toxicology.

Professor.

W. H. Ellis, 1900-

Associate Professor.

W. H. Ellis, 1897-1900.

Chair of Medical Jurisprudence.

Professors.

W. W. Ogden, 1887-1892. N. A. Powell, 1903-
Bertram Spencer, 1900-1903.

Associate Professor.

Bertram Spencer, 1896-1900.

Chair of Medical Psychology.

Extra-mural Professors.

Daniel Clark, 1887-1903. J. C. Mitchell, 1903-1906.
N. H. Beemer, 1900-

Professor.

C. K. Clarke, 1906-

Associate Professor.

Ernest Jones, 1912-1913.

Chair of Physics.

Professors.

James Loudon, 1887-1907. J. C. McLennan, 1907-

Associate Professors.

J. C. McLennan, 1905-1907.
E. F. Burton, 1911-

Assistant Professors.

L. Gilchrist, 1916-
J. Satterly, 1916-

Chair of Pathology.

Professor.

John Caven, 1892-1896.

Chair of Pathology and Bacteriology.

Professors.

John Caven, 1896-1900. J. J. Mackenzie, 1900-

Associate Professor.

J. A. Amyot, 1900-1910.

Professor of Clinical Pathology.

H. B. Anderson, 1903-1905.

Chair of Preventive Medicine.

Professor.

Charles Sheard, 1903-1911.

Chair of Pathological Chemistry.

Professors.

J. B. Leathes, 1909-1915.

Andrew Hunter, 1915-

INFORMATION FOR STUDENTS IN MEDICINE.

1. The thirty-third session since the re-establishment of the Faculty of Medicine of the University of Toronto will commence on Tuesday, the 30th of September, 1919.

2. The Degrees in Medicine are Bachelor of Medicine (M.B.), and Doctor of Medicine (M.D.).

BACHELOR OF MEDICINE.

3. Candidates for the degree of Bachelor of Medicine are required to matriculate and to attend during six sessions of at least eight months each the courses of instruction presented, and to pass six examinations taken in the following order: The First at the end of the first session; the Second at the end of the second session; the Third at the end of the third session; the Fourth at the end of the fourth session; the Fifth at the end of the fifth session; and the Sixth at the end of the sixth session.

ENTRANCE.

4. Candidates for the degree must pass the Matriculation examinations unless they (1) possess a degree in Arts, not being an Honorary Degree, from any Dominion or British University; or (2) have already matriculated in the Faculty of Arts or in the Faculty of Law in this University; or (3) possess a certificate of entrance into the Faculty of Education.

5. Students are required to complete matriculation before being admitted to the course in Medicine.

6. No fee will be charged for transferring from the Faculty of Arts to that of Medicine.

REGISTRATION.

7. Students entering the University are required to submit the certificates, on which they claim standing, to the Registrar of the University before being permitted formal registration with the Secretary of the Faculty.

It should be understood that the programme and regulations regarding courses of study and examinations contained in this Calendar, hold good for this calendar year only, and that the Faculty of Medicine, while fully sensible of its obligations towards the students, does not hold itself bound to adhere absolutely, for the whole six years of a student's course, to the conditions here laid down.

8. Registration for Clinical classes begins on September 30th and under no circumstances will any student be signed up before that date. Registration will not be accepted by letter, neither is one student permitted to sign for another, but each must register in person.

9. No student shall be allowed to register in the Faculty of Medicine after the first day of term of any year, and must be in actual attendance from the date of registration, and no student shall be admitted to any laboratory or clinical course after that date, except at the discretion of the instructor concerned. Any student desirous of repeating any year more than once must obtain the permission of the Faculty Council before being allowed to do so.

SPECIAL NOTICE.

The Senate of the University of Toronto has determined that the increase in the length of the undergraduate course in Medicine from five to six years will go into effect in the Autumn of 1919 (Session 1919-1920). All students entering on and after this date will be required to proceed in the Six Years' Course, with the exception of those who have been prevented from entering their course during the war on account of their having been on Military Service. Such students desiring to proceed in the Five Years' Course should forward their request to the Secretary's Office accompanied by a statement of their military service.

is not permitted to present himself for examination, either theoretical or practical, until he is able to present satisfactory certificates of term work completed. A student who for any reason may be required to repeat his year, must repeat his attendance at all the courses of the year and must produce evidence of having satisfactorily repeated the work of each course.

16. In cases of students applying for temporary positions in hospitals or for *locum tenens* to physicians the permission of the Faculty Council

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9. No student shall be allowed to register in the Faculty of Medicine after the first day of term of any year, and must be in actual attendance from the date of registration, and no student shall be admitted to any laboratory or clinical course after that date, except at the discretion of the instructor concerned. Any student desirous of repeating any year more than once must obtain the permission of the Faculty Council before being allowed to do so.

10. Regular attendance in all the courses of the year shall be required as well as a satisfactory repetition of the work of each course from any student who may be repeating his year.

11. Candidates who have been conditioned in one or more subjects at the Annual examinations and again fail in the subjects at the Supplemental examinations in the autumn, and who are thereby prevented from registering in the next succeeding year, shall be required to repeat the subject or subjects in which they have been conditioned before they can again present themselves for examination. In addition to the subject or subjects a student is required to repeat, he must also present certificates of having done satisfactory work in at least two subjects in addition to those he is required to take, either of the year in which he has been conditioned or in the succeeding year.

12. *A student who has attended the course of instruction in any year will be required to complete the examinations for that year before he will be permitted to register in the succeeding year.*

ANNOUNCEMENT REGARDING SIX YEARS COURSE.

Attendance.

13. Candidates are required to attend lectures and receive practical instruction during each of the six years at this University.

14. The Senate may accept certificates of attendance at the lectures and practical instruction in the laboratories of affiliated and other recognized institutions.

15. A student who fails to do satisfactory term work in any subject is not permitted to present himself for examination, either theoretical or practical, until he is able to present satisfactory certificates of term work completed. A student who for any reason may be required to repeat his year, must repeat his attendance at all the courses of the year and must produce evidence of having satisfactorily repeated the work of each course.

16. In cases of students applying for temporary positions in hospitals or for *locum tenens* to physicians the permission of the Faculty Council

must be obtained before they will be allowed to absent themselves from the lectures and laboratory work of the University.

The students of the Fifth Year are forbidden to accept house positions at the Hospitals during the period they are engaged in the work on Specialties, excepting only positions in the Obstetrical Hospital, such appointments to be held only during the five weeks that they are engaged in the work of Obstetrics and Gynaecology.

FEES FOR INSTRUCTION.

Regular Students in Medicine.

17. All University fees are payable to the Bursar, at his office in the Main University Building, between the hours of ten and one o'clock, except on Saturday.

18. *Regular Students.* First, Second, Third, Fourth, Fifth and Sixth Years—Annual Fee, including tuition, library, laboratory supply, hospital* and one annual examination—

If paid in full on or before November 10th..... $150.00

By instalments—

First instalment, if paid on or before November 10th..... 75.00
Second instalment, if paid on or before February 10th..... 78.00

19. *Combined Courses in Arts and Medicine.*

Annual Fee, including college registration, library, laboratory supply, and one annual examination:

	Arts Fees.	Medical Fees.	Total.
First Year Arts.....	$58.00		$58.00
Second Year Arts.....	58.00		58.00
Third Year Arts and First Year Medicine.....	59.00	$85.00	144.00
Fourth Year Arts and Second Year Medicine...	62.00	85.00	147.00

The fees for the Fourth, Fifth and Sixth Years in the Faculty of Medicine are as for regular students.

Payment of the Medical portion of the fees—

If paid on or before November 10th..... $85.00

By instalments—

First instalment, if paid on or before November 10th..... 43.00
Second instalment, if paid on or before February 10th..... 44.00

20. *Repeating the Year.*

If paid in full on or before November 10th..... 50.00

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*The composite fee of $150.00 includes one session's clinical facilities at the Toronto General Hospital, St. Michael's Hospital, or Toronto Western Hospital, and the Hospital for Sick Children, but does not cover the midwifery ticket for the Burnside Lying-in Hospital, which must be obtained there.

21. The following fees for *Occasional and Post-Graduate Students* have been instituted—

(1) That candidates for a higher degree in Medicine, or graduates conducting research work, be required to register and pay a fee of $5.00.

(2) That graduates or undergraduates wishing to repeat any undergraduate course in Medicine be charged $20.00 per course.

(3) Students in Dentistry taking a course in Anatomy will be required to pay a fee of $20.00.

(4) Students who are required to take the Summer Course in one of the Clinical subjects, will be charged a fee of $20.00 per course; those taking three or more courses will be charged $50.00.

22. All of the above fees are payable in advance. After November 10th, a penalty of $1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply. A student will not be admitted to any of the University lectures or laboratories who is in arrears for his fees.

23. *General Fees.*

Matriculation, or registration of Matriculation	$5.00
Supplemental examinations	10.00
Admission *ad eundem statum*	10.00
Degree of M.B.	20.00
Degree of M.D.	20.00
Admission *ad eundem gradum*	20.00

In the case of candidates for the Final Examinations, the fee for the degree must be paid to the Bursar not later than the 20th of March.

STUDENTS COUNCIL FEE.

The Annual Fee $2.00

Every male student in attendance, proceeding to the Degree of Bachelor of Medicine, is required to pay to the Bursar at the time of the entry of his name with the Secretary, the annual fee of two dollars for the maintenance of the Council of the Undergraduates.

Every woman student in attendance, proceeding to the Degree of Bachelor of Medicine, is required to pay to the Bursar at the time of the entry of her name with the Secretary, the annual fee of two dollars, in order to secure for the Women Students' Administrative Council sufficient funds to carry on the work of their Council, including joint financial responsibility with the Men's Student Administrative Council in the publication of "Varsity" and "Torontonensis" and the payment of a General Secretary-Treasurer for the Women's Council.

INSTRUCTION.

24. The course of instruction given by the Faculty of Medicine consists of six sessions of eight months each, preparing students for the degree of M.B. and for becoming general practitioners of Medicine.

25. The course is so framed that the requirements of the various Provincial Licensing bodies are fulfilled and it aims at giving the student such a training in the sciences as is now exacted of all those who desire to obtain any British Medical qualification in addition to a Canadian one.

26. During the early years an effort is made to give the student a scientific foundation for the work which he takes up in the latter part of his course. In each of the scientific departments, however, the fact that the student is about to become a general practitioner is particularly kept in view, and the student's work in the primary subjects is but a means towards an end.

27. In the First Year of the Six Years Course instruction in the subjects of Chemistry (Organic and Inorganic), Physics, Biology, is given by both laboratory and didactic methods. In Physics, a course will be given in physical measurements. A course of lectures will be delivered on the relation of Science to civilization and another on English expression.

28. In the Second Year of the Five Years Course the major part of the subjects of Anatomy, Physiology and Biochemistry is presented to the student; the subject of Histology is completed; and a course in Bacteriology is given.

29. During the Third Year of the Five Years Course an attempt is made to bridge the gap which so commonly exists between the primary scientific and the final clinical subjects, by taking up Anatomy and Physiology at the same time as Surgery and Medicine throughout the year. Preliminary courses in Pathology and Pathological Chemistry are given during the Easter term. Instruction is also given in Pharmacology. A series of ten lectures upon Psychology is delivered in this year. Particular attention is paid during this year to teaching the student the methods of physical examination of both Medical and Surgical cases.

30. In the Fourth Year of the Five Years Course the student devotes all his morning and one afternoon a week to clinical work at the various Hospitals. He spends the remainder of his afternoons at didactic lectures and at laboratory work in Pathological Histology and Gross Pathology. The clinical instruction is so directed as to prepare the student to undertake the complete physical examination of any patient, the greater part of his time being occupied with Medical and Surgical cases. In this year the student is introduced to the subjects of Obstetrics, Gynaecology, and the specialties of the Eye, Ear, Nose and Throat. Several weeks are spent in the study of Paediatrics and Orthopaedic Surgery at the Hospital for Sick Children. Lectures are also delivered during the year in Special Pathology, Therapeutics, Surgical Anatomy, Medical Jurisprudence, Toxicology and Hygiene.

31. During the Fifth Year of the Five Years Course the student devotes one period of ten weeks to Clinical Medicine (including Pædiatrics and the study of Tuberculosis); one of ten weeks to Surgery (including Genito-Urinary Surgery) and Surgical Pathology; and one period of five weeks to

Obstetrics and Gynæcology, and one of five weeks to Clinical Therapeutics, Ophthalmology, Oto-Laryngology, Dermatology, Infectious Diseases, Neurology and Psychiatry. Those students whose work and standing justify it, will be given special advanced courses of laboratory work in Pathology and Pathological Chemistry or some special instruction in one of the clinical departments. Clinical lectures in Medicine, Surgery and special subjects, Pathological Conferences, and short courses of lectures on Anaesthesia, Dentistry, Medical Ethics, History of Medicine, and Life Insurance are also given in the Fifth Year.

SUBJECTS OF INSTRUCTION.

32. FIRST YEAR.

1. Biology.
2. Chemistry (Inorganic and Organic).
3. Physics.
4. Mammalian Anatomy.
5. Embryology.
6. Histology.
7. Anatomy (Osteology).

33. SECOND YEAR.

1. Anatomy.
2. Physiology.
3. Biochemistry.
4. Histology.
5. Bacteriology.

34. THIRD YEAR.

1. Anatomy.
2. Physiology.
3. Pharmacology.
4. Pathology.
5. Pathological Chemistry.
6. Clinical Laboratory Methods.
7. Medicine and Clinical Medicine.
8. Surgery and Clinical Surgery.
9. Psychology.
10. Therapeutics.

35. FOURTH YEAR.

1. Medicine and Clinical Medicine.
2. Surgery and Clinical Surgery.
3. Topographical Anatomy.
4. Pathology.
5. Pathological Chemistry.
6. Obstetrics and Gynaecology.

7. Hygiene and Preventive Medicine.
8. Medical Jurisprudence.
9. Toxicology.
10. Psychiatry.
11. Paediatrics, Orthopaedics.
12. Ophthalmology.
13. Oto-laryngology.
14. Therapeutics.

36. FIFTH YEAR.

1. Medicine and Clinical Medicine.
2. Paediatrics.
3. Surgery and Clinical Surgery, Genito-urinary Surgery.
4. Pathology.
5. Obstetrics and Gynaecology.
6. Ophthalmology.
7. Oto-laryngology.
8. Therapeutics.
9. Dermatology.
10. Psychiatry.
11. Neurology.

SUMMER COURSES IN CLINICAL SUBJECTS.

37. For students only who have been conditioned in Clinical subjects, summer courses in the following subjects will be given during the months immediately preceding the Supplemental Examinations in September:

Clinical Medicine,
" Surgery,
" Obstetrics,
" Gynaecology,
" Ophthalmology,
" Oto-Laryngology,
" Psychiatry.

These Courses will be taught at the Toronto General Hospital, St. Michael's Hospital and the Hospital for Sick Children.

(For information regarding fees for these Courses, see pages 36, 37).

SCIENCE COURSES FOR STUDENTS IN MEDICINE.

38. The special attention of students about to enter the undergraduate course in Medicine is directed to the new Science curricula in arts, providing two Special Courses adapted particularly as preparatory to the instruction given in the final years in Medicine. These courses are—(1) The Biological and Physical Sciences Course and (2) The Physiological and Bio-Chemical Course. A student who proceeds to the degree of B.A., by either of these

courses, may, immediately after graduation, enter the Third Year in Medicine, but after completing the Fifth Year of the Medical Course, present himself for the degree of Bachelor of Medicine. It is thus possible for a student to obtain the degrees of Bachelor of Arts and Bachelor of Medicine after seven years' study at the University.

39. In the curricula of the two Arts Courses the Science subjects are treated much more extensively than they are in the Medical curriculum and in either course along one of two lines. In the Biological and Physical Sciences Course emphasis is laid on the structural and developmental features of animal life and on oecology and parasitology. In the Physiological and Biochemical Course special attention is given to the functional, chemical and other phenomena of living matter.

40. The Biological and Physical Sciences Course completes the requirements of the First two years in Medicine with the exception of Bacteriology of the Second Year. The course in Physiology and Biochemistry completes the requirements of the curriculum of the first three years in Medicine as to Primary subjects, with the exception of Bacteriology of the Second Year.

41. These courses not only afford opportunities for a broader training and greater scientific attainment than is possible in the six years' course in Medicine, but they fit the student for a much wider field of usefulness after graduation. The graduate who has taken one of the Science Courses in Arts and subsequently the Course in Medicine is qualified to devote his life to one of the purely scientific lines of Medicine, if he should so elect, after leaving the University, and, moreover, he is, undoubtedly, better fitted to practise his profession should he desire to prepare himself for that alone.

42. Students who proceed to the Arts degree through other Science Courses may, on entering the Faculty of Medicine, be allowed exemption from such subjects in Medicine as they have taken in the curricula of the Faculty of Arts.

B.Sc. COURSE.

43. The degree of B.Sc. (Med.) has been added to the curriculum in Medicine so as to encourage scholarship and give official recognition to students who have done exceptionally well in the introductory medical sciences.

44. QUALIFICATIONS.

1. Medical students who have reached the end of the third year or subsequent years of their course, and who have maintained a standard to be subsequently determined in all of their classes, may become candidates for the degree provided: (1) They spend one year longer (a fourth year) in the introductory medical sciences in groups of courses which will be mapped out on the general basis that the

greater proportion of time is spent in one department of the introductory medical sciences, and the lesser proportion in adjunct departments. These students would also, except in the case of those entering with senior or honour matriculation, be required to show facility in reading one modern language besides English, and to take sometime during the four years the two years optional course in Mathematics for medical students, or General Biology.

2. Graduates in Medicine irrespective of the standard of their entrance requirements, who have maintained a satisfactory standard throughout their entire medical course, may become candidates for the degree provided: (1) They spend one additional year in work in some laboratory department of this University (including those of the clinical years) and carry out a piece of research to the satisfaction of the head of the department. (2) They acquire facility in reading one modern language besides English. Medical graduates who return to laboratory departments as fellows or demonstrators will be eligible for the B.Sc. degree, but the successful prosecution of a piece of research is essential.

EXAMINATIONS.

45. The annual examinations are styled the First, Second, Third, Fourth, Fifth and Sixth examinations, and are to be passed at the end of the First, Second, Third, Fourth, Fifth and Sixth academic years respectively.

46. The Annual examinations are held in May, and the Supplemental examinations in September. Candidates who have been conditioned in one or more subjects at the annual examinations and again fail in the subjects at the Supplemental examinations in the autumn, shall be required to repeat the subject or subjects in which they have been conditioned before they can again present themselves for examination. In addition to the subject or subjects a student is required to repeat, he must also present certificates of having done satisfactory work in at least two subjects in addition to those he is required to take, either of the year in which he has been conditioned or in the succeeding year.

47. A minimum of fifty per cent. in each subject is required to pass, and seventy-five per cent. for honours. Candidates at the First and Second examinations who have passed in the majority of the subjects required, and candidates of the Third, Fourth and Fifth Years who have passed in all but three subjects, may present themselves at the Supplemental examinations next ensuing, in the subjects in which they failed (provided they have complied with the regulations respecting clinical work) and on passing at such examinations, shall be allowed their year.

48. A candidate failing in First, Second or Third Years shall not be allowed to take supplemental Examinations in the Autumn, but shall be required to repeat the year in which he has failed, except on special recommendation of the Board of Examiners, their recommendation to be

made at the time of the examiners' meeting of the Annual Examination. A candidate of the Fourth, Fifth or Sixth Years who has failed to pass in the required number of the subjects at one annual examination, and has either not presented himself or has failed to pass in all subjects in the next ensuing supplemental examination, must repeat his attendance at all courses of the year and must produce evidence of having satisfactorily repeated the work of each course, before he will be allowed to again present himself for examination.

49. A candidate failing in Medicine, Surgery or other Clinical subjects at the annual examinations shall be required to take a course of additional instruction provided by the Faculty of Medicine in the subject or subjects in which he has failed, before being again admitted to examination. The length of the term of additional study in each case of failure will be specified by the Board of Examiners in making their returns at the Annual Examinations.

50. Undergraduates below the standing of the Sixth Year, who have been rejected or who have been prevented from attending the annual examinations, by sickness, domestic affliction, or other causes beyond their control, may present themselves for examinations at the Supplemental examinations in September.

51. Candidates who failed to attend at the annual examinations must prove to the satisfaction of the President before presenting themselves in September, the existence and sufficiency of the alleged cause of absence.

52. Undergraduates of the Sixth Year who have failed in not more than three subjects may present themselves for examination in the said subjects at the Supplemental examinations in September.

53. In the case of Graduates or Undergraduates in Natural Sciences or Biology, certificates of attendance on the second course of Practical Anatomy and on the second course of fifty lectures on Anatomy may be presented with the certificates of attendance on the lectures of the Third Year.

54. No application from a student for aegrotat standing shall be entertained unless he has gained 50% of the laboratory or term marks in all departments of his course, or has been granted exemption from the same. Except under unusual conditions a special examination of the candidate shall be held. Such examination, if possible, must be held previous to the final meeting of the Board of Examiners.

ADMISSION TO EXAMINATIONS.

55. A candidate will not be admitted to an examination unless he has paid all the fees due from him.

56. A candidate who sends his application for examination after the day appointed for the receipt of such application must pay an additional fee of one dollar.

57. No candidate in a course involving practical work in a laboratory

will be admitted to examination if the Professor under whom his work is carried on reports in writing to the Secretary that he has not done satisfactory laboratory or clinical work or has signally failed in the practical examinations. No candidate in the First Year shall be permitted to present himself at the annual examinations until a report that he has obtained satisfactory standing in his laboratory work and in term examinations is presented to the Secretary's Office by the Heads of the Departments of Biology, Chemistry and Physics.

58. Every undergraduate who proposes to present himself at an examination must send to the Secretary a statement (according to a printed form which will be furnished) of the course he is taking, whether he intends to compete for Honours, and such other particulars as the printed form may indicate, together with the original certificates referred to in this statement. At the Sixth examination, the candidate is required to submit the following certificates—

(1) Of having conducted at least twenty labours.
(2) Of proficiency in vaccination.
(3) Of having attended fifteen autopsies.

Students of the Sixth Year shall only be eligible to take off their required number of Obstetrical cases in the hospitals during the time that they are attending Obstetrical clinics.

59. The work in the laboratories and in the wards of the hospitals during the session is an essential part of the instruction and will be considered in determining standing at any examination.

60. Before admission to examination the candidate is required to submit evidence of having complied with the regulations respecting attendance upon didactic, laboratory, and clinical work in each of the subjects of instruction for the year in which he seeks examination. A certificate is issued by the University, and must be signed by the head or heads of each department of instruction.

SUBJECTS OF THE FINAL EXAMINATIONS.

61. First Examination.

1. Biology (including Embryology, Histology and Mammalian Anatomy).
2. Chemistry.
3. Physics.

62. Second Examination.

1. Anatomy.
2. Physiology.
3. Biochemistry.
4. Histology.
5. Bacteriology.

63. THIRD EXAMINATION.

1. Anatomy.
2. Physiology.
3. Pharmacology.
4. Pathology and Pathological Chemistry.

If the term work and examination in Medicine and Surgery are not satisfactory, students of the Third Year will be required to attend the Summer course in Clinical work and pass a satisfactory examination at the Supplemental Examination.

NOTE.—The oral examination in General Anatomy will be held at the end of the Michaelmas term.

64. FOURTH EXAMINATION.

1. Clinical Medicine, including Clinical Laboratory work.
2. Clinical Surgery and Topographical Anatomy.
3. Pathology and Pathological Chemistry.
4. Obstetrics and Gynaecology.
5. Hygiene and Preventive Medicine.
6. Medical Jurisprudence and Toxicology.
7. Therapeutics.

65. FIFTH EXAMINATION.

1. Medicine, including Paediatrics and Clinical Medicine.
2. Surgery and Clinical Surgery.
3. Pathology.
4. Obstetrics and Gynaecology.
5. Clinical Ophthalmology.
6. Clinical Oto-Laryngology.
7. Clinical Therapeutics.

The final standing of students in Ophthalmology, Oto-Laryngology, and Gynaecology may be determined by an examination at the end of the trimester in which the students have received their instruction in these subjects, but a student may postpone his examination until the end of the session.

EQUIVALENT HONOUR COURSES AND EXAMINATIONS.

66. The following Honour courses of instruction and examination in the Faculty of Arts are accepted in the place of courses of instruction and examinations in the Faculty of Medicine, subject to possible amendment during the present session, according to the subjoined scheme.

Faculty of Arts.		Faculty of Medicine.
1. First and Second Years Physics of the courses in Mathematics and Physics and in Natural and Physical Sciences	is accepted for	First Year Physics.
2. First Year *Biology	is accepted for	First Year Biology (General Biology).
3. Mammalian and Comparative Anatomy of Second Year Biological and Physical Sciences and Third Year Biology	is accepted for	First Year Biology, Mammalian and Comparative Anatomy
4. Histology and Cytology of courses in Third Year Biological and Physical Sciences	is accepted for	Histology of the Second Years
5. Embryology of Third and Fourth Years of courses in Biological and Physical Sciences and Biology	is accepted for	Embryology of the Second Year
6. Biochemistry of Third and Fourth Years of course in Biological and Physical Sciences	is accepted for	Biochemistry of Second and Third Years
7. Physiology of Third and Fourth Years of courses in Biological and Physical Sciences	is accepted for	Physiology of Third Year
8. Chemistry of First and Second Years of courses in Biological and Physical Sciences	is accepted for	Chemistry of First and Second Years

*Provided 50% has been obtained in the examination.

9. Anatomy of Third and Fourth Years of course in Biological and Physical Sciences..	is accepted for	Anatomy of the Second Year
10. Anatomy of the Second and Third Years of the Physiological and Biochemical course	is accepted for	Anatomy of the Second Year
11. Biochemistry of the Third Year in the Physiological and Biochemical course	is accepted for	Biochemistry of the Second and Third Years
12. Physiology of the Third and Fourth Years of the Physiological and Biochemical courses (including Physiological Neurology)	is accepted for	Physiology of the Third Year
13. First and Second Class Honours in the Physiological and Biochemical course	is accepted for	Honours in Physiology and Biochemistry

No applications or petitions for exemptions from classes, laboratory work or examinations will be received or considered unless filed at the Secretary's office on or before October 15th of any year.

EQUIVALENT EXAMINATIONS.

67. Courses of lectures and examinations in the Faculty of Arts are accepted in the place of courses of lectures and examinations in the Faculty of Medicine, according to the following scheme—

Faculty of Arts.		Faculty of Medicine.
1. The instruction and examinations of the Third Year in the Physiological and Biochemical course	equivalent to	The course and examinations in the Second Year except in Bacteriology
2. The instruction and examinations in the Fourth Year of the Physiological and Biochemical course	equivalent to	The course and examinations of the Primary Subjects in Medicine except in Bacteriology

3. The instruction and examinations in Physiology and Biochemistry of the Third and Fourth Years in the Biological and Physical Sciences	equivalent to	The course and examinations in Physiology and Biochemistry of the Second Year
4. The instruction and examinations of the Fourth Year of the course in Biological and Physical Sciences	equivalent to	The course and examinations in the Second Year, except Bacteriology

68. Candidates who desire to compete for scholarships and medals are required to submit to the annual examination in all the subjects of each examination, though otherwise entitled to partial exemption according to the preceding scheme; and candidates not competing for scholarships or medals, who are entitled to exemption according to the preceding scheme, will rank in Honours in these subjects.

HONOUR STANDING.

69. In the results of the examinations of each year, a list of those students who obtain an average of 75% in all subjects of the year and not less than 60% in any subject, shall be published as having obtained Honour Standing.

The names of those students who have obtained Honour Standing in the last two years of the course, shall in the graduating list be marked so as to indicate the fact that they have graduated with Honours.

ADMISSION AD EUNDEM STATUM.

70. Undergraduates of other universities applying for admission *ad eundem statum* must present certificates of having passed the examinations in the various subjects of this curriculum preliminary to the examination for which they desire to present themselves.

Application for Equivalent Standing.

71. Any student of another university who desires to be admitted to the Faculty of Medicine of this University with equivalent standing is requested to send his application to the Secretary of the Medical Faculty together with—

1st. A statement of preliminary education with certificates.

2nd. A Calendar of the university in which he has studied, giving a full statement of the courses of study.

3rd. A complete statement of the course he has followed.

4th. A certificate of the standing gained, and of conduct. These will be submitted to the Faculty, who will decide what examinations may be necessary before admitting the candidate.

5th. No student in Medicine will be received by this University from other universities whose certificates for courses are not complete for the period prior to that at which he received standing in the University of Toronto.

DOCTOR OF MEDICINE.

72. A Bachelor of Medicine will be eligible for the degree of M.D. on the following conditions—

(1) At least one year must elapse between the date of conferring the degree of M.B. and that of conferring the degree of M.D.

(2) He must present an approved thesis embodying the results of an original research conducted by the candidate in any department of Medicine.

(3) The subject of the thesis must be submitted to the Registrar for the approval of the Board of Post-Graduate Studies at least five months before the degree is conferred.

(4) The degree may be conferred at any regular meeting of the Senate.

ADMISSION AD EUNDEM GRADUM.

73. A graduate of any of the universities in Great Britain or Ireland, if his degree be not an honorary one, may be admitted to the like degree in the University of Toronto. He must send in his certificate to the Registrar at least two weeks before the first meeting of the session of the Senate at which his application is to be brought forward.

The George Brown Memorial Scholarship in Medical Science.

74. Dr. A. H. F. Barbour, of Edinburgh, having placed one thousand pounds sterling at the disposal of the University of Toronto, for the purpose of founding a Scholarship in Medical Science in memory of the late Hon. George Brown, the following regulations have been adopted with regard thereto—

This scholarship shall be called the George Brown Memorial Scholarship in Medical Science and shall be awarded annually at the Convocation for conferring degrees in Medicine to the Bachelor of Medicine who shall have distinguished himself most in the subjects of Anatomy, Biology, Physiology, Biochemistry, Pharmacology, Pathology and Pathological Chemistry.

The award shall be made by a committee composed of the Professors in these subjects who shall report as to the successful candidates, after having given due attention to the results of the annual examinations, and to the character of the work done by the candidates in the University laboratories.

The holder of the scholarship during the year of tenure is required to engage in original research in any one of the laboratories of the University on some subject bearing on the advancement of medical science—the laboratory providing the material for the investigation.

The scholarship is to be paid in two portions, two-thirds at the time of award and one-third six months later, on the holder giving satisfactory report (to whomsoever the University may appoint) of the work he has already done.

A report of the research, when completed, is to be given to the University.

The value of the scholarship is five hundred dollars ($500.00).

The Starr Medals.

75. The late Richard Noble Starr, M.D., devised certain property for the encouragement of post-graduate study in Anatomy, Physiology and Pathology, and in fulfilment of this object one gold and two silver medals called the "Starr Medals", are awarded annually to three candidates for the degree of M.D., who have shown by the theses which they have presented for that degree, that they have successfully pursued such study in any one of these subjects. The theses for which these medals are given must attain a standard approved of by the Board of Examiners, and the relative value of the theses will determine the rank of the candidates for the medals.

George Armstrong Peters Scholarship.

76. The Scholarship will be awarded biennially to a graduate student of the University of Toronto on the recommendation of the Department of Surgery.

The first award was made in 1912 and the holder of the Scholarship will be required to undertake work in one of the Departments of the University which will have some special bearing on Surgery.

This Scholarship will be available for any graduate who wishes to do special research work in connection with the Department of Surgery or in correlated subjects.

A graduate wishing to obtain the Scholarship must apply to the Department of Surgery and present his credentials, and the award will be made on the recommendation of the Department.

The value of the Scholarship is two hundred dollars ($200.00).

A Prize.

77. A portion of the fund of the Reeve Post-Graduate Scholarship will be devoted to establishing a prize of $50.00, to be awarded annually for the best published report of work done in the laboratories by a research Fellow or junior member of the staff in any department in Medicine.

The award shall be made in September by a Committee composed of the Professors of Anatomy, Physiology, Biochemistry, Pharmacology, Pathology and Pathological Chemistry.

Chappell Prize.

78. Dr. Walter F. Chappell, of New York, a graduate in the Faculty of Medicine of the University of Toronto, has established a prize of Fifty Dollars ($50.00) per annum to be awarded in alternate years to the best student of the final year in Clinical Medicine or Clinical Surgery. In June, 1920, the prize will be awarded in Clinical Surgery. This prize is awarded on recommendation of the Head of the Department.

The James H. Richardson Research Fellowship in Anatomy.

79. This Fellowship of the annual value of Five hundred dollars ($500.00) has been established in memory of the late Dr. James H. Richardson, for many years Professor of Anatomy in the University of Toronto. It is open to graduates in Medicine of the University of Toronto and of such other Universities and Medical Schools as may be approved by the Nominating Committee and to students in the University of Toronto who shall have completed the third year of the course in Medicine.

The fellowship is awarded on the nomination of a Committee consisting of the Professor of Anatomy, the Professor of Biology and the Professor of Surgery in the University of Toronto, and the holder of it is obliged, during its tenure, to devote his entire time to investigation in Anatomy under the direction of the Professor of Anatomy in the University of Toronto. The fellowship is tenable for one year, but the holder of it is eligible for re-appointment for not more than two additional years, at the discretion of the University Senate upon the recommendation of the Nominating Committee.

Applications for nomination to the Fellowship should be handed to the Professor of Anatomy not later than the first day of May of each year.

Research Medicine.

80. During the early months of 1913, on request, a number of business men subscribed to a fund for the promotion of Clinical and Laboratory Research work in the Department of Medicine. The fund has already reached upwards of $75,000.00; it is payable in five annual instalments.

The first aim is to establish one or more Fellowships annually, for the recent graduates. Each Fellowship is tenable for three years, and will be of the value of $750 the first year. In the meantime, two or more Senior Research Fellows are to be appointed, whose duty it will be to aid the Fifth Year students in their work and stimulate them to higher aims.

There has also been appointed an Assistant in charge of special research work in Tuberculosis, etc.

It is also hoped to have a sufficient fund to defray expenses of any approved research work that may be offered.

RESIDENCE FOR MEN.

By the generosity of Mr. and Mrs. E. C. Whitney and other friends, the University can now offer to some hundred and fifty men the peculiar

advantages of residential life and excellent accommodation within its own grounds. The Residence, opened in November, 1908, consists of three Houses situated on the north side of Hoskin Avenue, opening upon a quadrangle the fourth side of which is formed by Devonshire Place. They stand about two hundred yards to the north of University College and of the University Dining Hall and close to the University Gymnasium and Athletic Field. The buildings are known as the South, East and North Houses.

Each house contains twenty-four single rooms, one single suite, one double room and eleven suites, a suite comprising a study and two bedrooms. A large room in each building, with an open hearth and a library has been set aside as a common room. A lavatory with hot and cold shower baths is provided for every eight men. The buildings are heated by steam and lighted by electricity.

The University supplies the table, chairs, book-case, chiffonier, bed, mattress, pillows, linen and window shades for each room; it is prepared to furnish a drop-light for a nominal rent.

Each occupant is charged $3.00 room-rent per week, payable to the Bursar four weeks in advance. The charge for each single suite is $4.00 per week. These charges cover heat, light, house-service, house-laundry, and the use of the telephone. There is no separate dining hall connected with the Residence, but board may be obtained at the adjacent University Dining Hall for $4.50 per week.

Applications for rooms must be made in writing to the Secretary of the Residence Committee (address the Registrar's Office) and must be accompanied by a deposit of $5.00. This deposit will be returned if the application be not granted, but will be forfeited if a room be assigned to the applicant and not taken by him, unless notice of his refusal of the room be received by the Secretary in writing before September 8th. It will be returned in full at the end of the College year if the room key be given back and the room and furniture left in a satisfactory condition. The following principles govern the allotment of rooms: (i) In order to be assigned a room in the Residence, either before or during the session, a student must have obtained standing at the previous spring examination, with not more than *one* condition against him. (ii) The rooms in each House will be distributed between the various Faculties and Years. (iii) A limited number of rooms will be reserved for members of the incoming First Year until September 18th. (iv) Applications will be considered in order of priority.

The University lays down three general rules, designed to prevent hazing, the use of intoxicants and gambling. The students in each House shall elect a House Committee, which is entrusted by the University with the making and enforcing of any other needed rules and with the maintenance of order. A member of the Faculty resides in each House to act as friend and adviser to the men in residence.

CURRICULUM FOR THE DIPLOMA OF PUBLIC HEALTH.

1. The University provides a Diploma in Public Health (D.P.H.) on the conditions hereinafter detailed.

2. Candidates for the Diploma must be graduates in Medicine of this University or of some other University recognized for this purpose by the Senate.

3. The curriculum leading to the Diploma shall extend over one Winter Session of eight months and one Summer Session of three months.

4. The Winter Session shall be devoted to Laboratory work in

a. Sanitary Chemistry.

b. Bacteriology.

c. Parasitology.

and to courses in

d. Advanced General Hygiene.

e. Advanced General Pathology, including Theory of Immunity and Comparative Pathology.

f. Elements of Geology, Meteorology and Climatology, in their relation to Public Health.

g. Sanitary Engineering.

h. Sanitary Legislation and Vital Statistics.

i. Clinics on Contagious Diseases.

j. History of Preventive Medicine and Epidemiology.

5. The Summer Session shall be devoted to a course of practical work in Public Health under the supervision of the Provincial Board of Health, including the methods of dealing with infectious diseases, inspection of schools and other public buildings, factories and dairies, inspection of water supplies and sewage disposal plants and other forms of municipal sanitation.

6. At the conclusion of the Winter Session an examination will be held on the subjects of the curriculum in Public Health specified in paragraph 4, the passing of which shall be a necessary preliminary to entering upon the practical course indicated in paragraph 5.

7. Candidates who have passed the examination and who present from the Provincial Board of Health a certificate of efficiency in the subjects specified in paragraph 5, will be granted the Diploma of Public Health.

8. The fees for the Course shall be $150, payable in two instalments of $75. each at the beginning of the Winter Session and the Summer Session respectively. The fee for the Diploma shall be $20.

9. Up to and including 1907, graduates in Medicine who have acted as Medical Health Officers for a period of two years may present themselves for the examination referred to in paragraph 6 without preliminary attendance on the Courses of Instruction. For such candidates the fee for the Diploma shall be $100.

CURRICULUM IN DENTISTRY.

DEGREE OF DOCTOR OF DENTAL SURGERY.

Matriculation.

Candidates for the degree of Doctor of Dental Surgery must pass the Matriculation Examination hereinafter mentioned, unless—

1. They possess a degree in Arts (not being an Honorary Degree), from some recognized University; or

2. Have already matriculated in the Faculty of Arts in this or some other University in Canada; or

3. Are Matriculants in the College of Physicians and Surgeons of Ontario; or

4. Have passed the Normal Entrance or Entrance to the Faculty of Education examinations in which the Latin option has been taken, it being understood that the equivalent examinations under titles no longer in force will be accepted.

The regulations respecting the acceptance *pro tanto* of the certificates of other Provinces, as defined in the Curriculum for Junior Matriculation are applicable to candidates in Dentistry.

5. Have passed an examination and received a certificate which is accepted by the General Medical Council of Great Britain for Registration as a student of Medicine or Dentistry.

Candidates not possessing any of the above-named qualifications will be required to pass the examination prescribed for matriculants in the Faculty of Arts in this University.

Candidates for the degree must matriculate before writing on any of the subjects prescribed for final examination.

Undergraduates.

1. Undergraduates (candidates for the final examination for the degree) matriculants in the Royal College of Dental Surgeons, an affiliated College of the University, and proceeding to graduation therefrom, must have complied with all the requirements prescribed from time to time, by the Board of Directors of the Royal College of Dental Surgeons of Ontario for admission to examination for a Certificate of License to practise Dentistry in Ontario, provided always that these requirements shall include attendance on at least four full courses of lectures, and laboratory and clinical instruction, embracing all the subjects of the curriculum, of not less than seven months each, except in the case of students who have already graduated in the Faculty of Arts (B.A. or M.A.), or the Faculty of Medicine (M.B. or M.D.), or the Faculty of Science (B.A.Sc. or B.Sc.), of a Canadian or other recognized University, who may complete the course in Dentistry in three years instead of four.

2. Persons holding the L.D.S. Certificate, granted by one of the Medical authorities of Great Britain, and persons holding the B.D.S. Degree of Melbourne University, Australia, will be admitted as undergraduates in the Department of Dentistry without further examination, and to the final examinations of the degree of D.D.S., on completing one full session at the School of Dentistry of the Royal College of Dental Surgeons of Ontario, and payment of the proper fees.

3. Undergraduates (candidates for examination for the degree), not coming under the provisions of either of the two preceding sections, must have been engaged in the study of Dentistry for four academic years, and have attended four full courses of lectures and laboratory and clinical instruction, embracing all the subjects of the Curriculum, of not less than seven months each, at a School of Dentistry recognized by this University, the last of which must have been at the School of Dentistry of the Royal College of Dental Surgeons of Ontario.

Examinations.

Candidates for the degree must pass two examinations, an intermediate and a final, an interval of not less than one year intervening between them. Until further provisions be made, a certificate of having passed the intermediate examination of the Royal College of Dental Surgeons of Ontario will be accepted by this University.

Candidates for the final examination, which will be held at a time fixed by the Committee on Examinations, must present to the Registrar satisfactory certificates, covering all the requirements relating to undergraduates as given above, and of having passed the intermediate examination.

The subjects for intermediate examinations shall be:

(*a*) Comparative Dental Anatomy.
(*b*) General and Dental Histology.
(*c*) Bacteriology.
(*d*) Anatomy.
(*e*) Physiology.
(*f*) Chemistry.
(*g*) Dental Technic.
(*h*) Theory of Operative Dentistry.
(*i*) Theory of Prosthetic Dentistry.
(*j*) Dental Materia Medica.

The subjects for final examination shall be:

(*a*) General Anatomy and Special Anatomy of the Head and Neck.
(*b*) Physiology.
(*c*) Surgery and General Pathology.
(*d*) Chemistry.
(*e*) Medicine, Physical Diagnosis, and Anaesthetics.
(*f*) Theory and Practice of Operative Dentistry, Dental Pathology.
(*g*) Theory and Practice of Prosthetic Dentistry.

(*h*) Science and Practice of Dentistry.
(*i*) Orthodontia.
(*k*) Dental Materia Medica and Therapeutics.
(*l*) The Jurisprudence, Ethics, and History of Dentistry.
(The above examinations will be written.)
(*m*) Practical Operative Dentistry.
(*n*) Practical Prosthetic Dentistry.

Candidates shall be examined in practical work from time to time, during the session of the Royal College of Dental Surgeons, on completion of the required work in the Infirmary and Laboratories of the College.

Annual examinations in April, and supplemental examinations in September, will be conducted under the joint auspices of the University and the Royal College of Dental Surgeons of Ontario.

Regular students of the Royal College of Dental Surgeons proceeding to the degree of D.D.S. may take the final examination in any subject at the close of the session in which it is completed in the College.

Candidates will be credited at the Annual and Supplemental Examinations for term work and term examination, conducted by the Professors in the several subjects, in the proportion of 30 to 70.

No candidate shall be considered as having passed on any paper unless he has obtained 50 per cent. of the marks allotted to the paper.

Equivalent Examinations.

Examinations in the Faculty of Arts in the Department of Natural Science, Division I., are accepted in lieu of examinations for the degree of Doctor of Dental Surgery, as follows:

(*a*) Physiology and Chemistry of the Second Year for the Physiology and Chemistry of the intermediate examinations.

(*b*) Histology of the Fourth Year for the General Histology and Bacteriology of the intermediate examinations.

(*c*) Chemistry of the Third Year and Physiology of the Fourth Year for Chemistry and Physiology of the final examinations.

(*d*) On application to the Senate, similar credits may be given for similar examinations passed in the Faculty of Arts or the Faculty of Medicine of other Universities.

Fees.

The fee for examination for matriculation, in whole or in part, or for registration of any certificate accepted in lieu of examination, shall be five dollars.

The fee for final examination shall be ten dollars, which shall be paid before writing on any subject of the final examination.

The fee for supplemental examination in one or more of the final subjects shall be ten dollars.

The fee for the degree of D.D.S. shall be fifteen dollars, which shall be paid before writing on the examination of the final year.

No fee shall be charged for transference from any Faculty of the University to the Department of Dentistry.

The fee for admission ad eundem gradum shall be twenty dollars.

Concurrent Course in Medicine and Dentistry.

Students who are matriculants in the Faculty of Medicine and in the Department of Dentistry may take a concurrent course in Medicine and Dentistry, which will extend over seven years.

Students taking this course will pass the regular University examinations in the subjects of the Medical Curriculum from year to year as they are completed in the Medical Faculty and in the final Dental subjects of the curriculum in Dentistry, from year to year as they are completed in the Royal College of Dental Surgeons.

Students taking this concurrent course, who have fulfilled all the requirements for the degree of M.B., and who have successfully passed the examination in the Dental subjects of the curriculum in Dentistry, including Dental Materia Medica and Therapeutics, shall receive the degree of D.D.S.

The fee payable to the University shall be $50 per year for the first four years, and $150 per year for the last three years, and the several laboratory fees.

COURSES OF LECTURES.

METHODS OF INSTRUCTION, WINTER SESSION, 1919-1920.

CHEMISTRY.

Professor: W. R. LANG.

Professor of Physical Chemistry: W. LASH MILLER.

Associate Professor: F. B. KENRICK.

Associate Professor of Organic Chemistry and Secretary of the Department of Chemistry: F. B. ALLAN.

Lecturer: W. S. FUNNELL.

Assistants: W. R. FETZER, E. I. FULMER, A. L. MARSHALL, M. E. SMITH, L. E. WESTMAN.

All lectures and practical work will be given in the Chemistry Building.

Second Year.

Lectures—A course of lectures given twice a week on Organic Chemistry.

Practical Chemistry.—A special laboratory course to accompany the above lecture course will be given during the Easter Term.

(The second year course in chemistry will not be given in the year 1919-1920.)

Students working in the laboratory are provided with the necessary apparatus on making a deposit of four dollars at the commencement of the session, which will be returned at its close after the following charges have been deducted from it—

(1) The cost of all apparatus broken or destroyed.

(2) Any fines for breach of laboratory rules.

No certificate will be given for the practical work unless the student has passed the practical examinations conducted during the session.

Text-books:—Modern Inorganic Chemistry, Mellor; Inorganic Chemistry, Newth; General Chemistry for Colleges, Alex. Smith; Organic Chemistry, Norris; Physical Chemistry for Physicians and Biologists, Cohen and Fischer; An Elementary Laboratory Course in Chemistry, Kenrick and DeLury; Outlines of Qualitative and Quantitative Analysis, Lang.

Books of reference recommended:—Inorganic Chemistry, Richter; Organic Chemistry, Richter.

PHYSICS.

Professor and Director of the Physical Laboratory: J. C. McLENNAN.

Associate Professor: E. F. BURTON.

Assistant Professors: L. GILCHRIST, J. SATTERLY.

Demonstrator: H. A. McTAGGART.

Assistant Demonstrators: MISS E. BISHOP, R. C. DEARLE, MISS A. W. FOSTER, MISS I. B. GILES, S. McLEAN, MISS M. I. MACKEY, MISS H. C. MILLAR, E. R. PRATT, MISS F. M. QUINLAN, J. C. THOMPSON, W. F. TWISS.

The work of instruction on Physics consists of a series of lectures and a course in practical work in the laboratories.

First Year.

Lectures.—The lectures on Physics will not only give a concise outline of the subject, but are intended to form a satisfactory foundation for future study in other branches of science.

A course of lectures on Practical Mathematics for students of Physics will be given one day a week during the whole year. The lectures will deal with the best methods of conducting experiments in order to get results of the desired degree of accuracy, the methods of taking averages, probable errors in the measurements, approximations, simplified arithmetic, percentage error of the results obtained. Each lecture will be followed by one hour on the practical application of the principles dealt with in the lecture.

There will be three lectures in Physics per week during the year; one lecture each week bears directly on the practical work assigned to the student, while the other two lectures each week are part of a course dealing more particularly with the principles of Physics of special use to students of Medicine. The following is an outline of the work covered:

1. MECHANICS.

Measuring instruments, length, volume, weight, force, forces in equilibrium, moment of a force, centre of gravity, machines, velocity, acceleration, momentum, force (considered statically and dynamically), work, energy, power; calculations to illustrate the laws of mechanics, simple harmonic motion, the pendulum.

2. HYDROSTATICS AND HYDRODYNAMICS.

Fluid pressures and their transmission, specific gravity, the barometer, pumps, general properties of liquids and gases at rest and in motion, viscosity, capillary phenomena.

3. HEAT.

Thermometers, thermal expansions, calorimetry, specific heat, latent heat, change of state, vapour pressure, hygrometry, thermal conduction, radiation, laws of cooling, heat and energy.

4. Properties of Matter.

Kinetic theory of matter, structure of solids, liquids and gases, existence of molecules, elastic properties and various moduli of elasticity, viscosity of liquids and gases, surface tension and capillarity, changes of states from solids to liquids and gases, liquefaction of gases, critical temperature and critical pressure, production of low temperature, recent confirmation of the molecular theory, Brownian movement, colloidal solutions and their relation to body fluids, the atomic theory, conduction of electricity through gases, radioactivity and radiations.

5. Sound.

General explanation of wave-motion, production, propagation, and detection of sound waves, reflection, absorption and interference of sound waves, resonance, tuning forks, organ pipes, vibrating strings and the musical scale, analysis of complex sounds, voice production.

6. Light.

Laws of reflection and refraction, mirrors, prisms, lenses, microscope and telescope, dispersion, colour, spectroscopy, double refraction and polarisation.

7. Electricity and Magnetism.

Laws of magnetism, static electricity, condensers, electrical conduction in solids, liquids and gases, voltaic cell, chemical, magnetic and heating effect of the electrical current, potential. Ohm's law and its applications, laws of electrical resistance, electromotive forces, induction, the induction-coil, high frequency currents, X-rays, electrical waves and radioactivity. Production of currents used in electrotherapy, galvanism, faradism, ionic and high frequency treatment, radiology.

Practical Work.—The Practical Work, consisting of a laboratory course of three hours designed to illustrate the principles dealt with in the lectures, will be conducted under the supervision of the Director of the Laboratory. In addition to the above, each student is required to attend a tutorial class, one hour each week, in the general work covered by the above course.

Regulations.—Deposit Fee: Each student taking the laboratory course is required to make a deposit of two dollars ($2.00) before beginning work. All supplies, apparatus broken or destroyed and all fines will be charged against this deposit, which must be renewed when exhausted. At the close of the session cash balances will be returned on a day appointed for the purpose.

Text-book: W. H. White, Hand-book of Physics.

Relation of Science to Civilization.

First Year.

Lectures.—Approximately one half of the assigned time of 60 hours will be devoted to a course of lectures designed to illustrate the influence which scientific thought and achievement have had on the development of modern civilization. The remaining half of the time will be devoted to conferences in which the collateral reading of the students will be reviewed in its relation to the subject matter of the lectures. These lectures will be given jointly by several lecturers, but the course as a whole will be under the general direction of Professor Huntsman.

Attendance and examination requirements are the same for this as for other courses of the first year.

EXPRESSION.

First Year.

Tutorial Classes.—In this course instruction will be given in the correct use of written and spoken English, and opportunity will be afforded each student to acquire experience in public speaking.

In order that the instruction may be as thorough as possible, the class will be divided into several groups, each of which will meet twice a week.

BIOLOGY.

Professor of Zoology: B. A. BENSLEY.
Associate Professor of Histology and Embryology: W. H. PIERSOL.
Associate Professor of Zoology: E. M. WALKER.
Lecturer in Vertebrate Embryology: A. F. COVENTRY.
Lecturer in Biology: W. A. CLEMENS.
Lecturer in Comparative Anatomy: B. S. CORNELL.
Temporary Assistant in Embryology: M. D. MCKICHAN.
Demonstrator: E. H. CRAIGIE.
Class Assistants: A. G. MCPHEDRAN, J. M. MACDONALD, J. H. COTTON, R. J. P. MCCULLOCH, A. ISAACSON, R. S. STONE, A. H. LEIM, G. S. EADIE, C. W. HARRIS.

First Year.

Lectures.—1. Students of the First Year will attend a course of lectures on General Biology, to be given twice a week throughout the session. This course of lectures is designed as an introduction to the whole range of Biological studies. After a sketch of the scope and objects of these, the lectures will treat (1) of the fundamental principles of Biology, as illustrated by the simplest animals and plants, (2) of typical forms of higher plants, in ascending order, (3) of typical forms of animals in a similar order, and (4) special reference will be made to those aspects of Biology of interest to students of Medicine.

2. A course of twenty-five lectures given in connection with the Practical Work of Course 1.

3. A course of twenty-five lectures on Embryology during the Easter term will be chiefly devoted to the development of the external form, organs, and tissues of the human body, but the necessary comparative data for the proper understanding of these will be supplied by reference to the embryology of the lower vertebrates. The student may consult the large collection of models of embryology in the Museum, which are now furnished with explanatory labels designed to supplement the instruction given in the lectures.

4. A course of twenty-five lectures on the principles of General Histology.

Practical Work.—1. A course of fifty hours' duration is given on General Biology, in which various types are studied, and which serves as an introduction to the use of the microscope.

2. A course of seventy-five hours on Mammalian Anatomy as an introduction to Human Anatomy is given during the Michaelmas term.

3. A course of fifty hours on General Histology.

4. A course of twenty-five hours in Embryology given from a selected series of specimens illustrative of the lectures on that subject—Course 3.

First Year, Six Years' Course.

Lectures.—1. Students of the First Year will attend a course of ninety lectures to be given three times a week during the session. The lectures will serve as an introduction to the biological fields in relation to medicine. The topics include (1) the general nature of living organisms and of cell processes, (2) the types of lower organisms of interest to students of Medicine, (3) the elements of comparative anatomy, and (4) biological principles as applied to man.

Practical Work.—2. A course of one hundred and eighty hours, comprising two three-hour periods per week, the materials of which are based as far as possible on Lecture course I. The work comprises microscope practice, elementary experimental studies on the nature of cell processes, types of lower organisms, and a selected list of vertebrates, including the elements of mammalian anatomy.

Second Year, Six Years' Course.

Lectures.—A course of fifteen lectures on the more intricate problems of Human Histology.

Practical Work.—A course of fifty hours in Special Human Histology. The student will have the opportunity of providing himself with a set of typical histological specimens.

Text-books: Biology: Parker, Bigelow.
Embryology: McMurrich, Manual of Embryology.
Mammalian Anatomy: Bensley, Practical Anatomy of the Rabbit.

Histology: Piersol, Normal Histology, 10th ed.; Böhm, v. Davidoff and Huber, Text-book of Histology, 2nd ed.; Bailey, Text-book of Histology, 3rd ed.; Jordan and Ferguson, Text-book of Histology.

Reference Text-books:—Embryology: Bailey and Miller, 3rd ed., Keibel and Mall. Histology: Schäfer, Text-book of Microscopic Anatomy (Quain's Anatomy, 11th edition; vol. II, pt. 1); Sobotta, Atlas of Human Histology.

PHYSIOLOGY (General Physiology).

Professor of Physiology: J. J. R. MACLEOD.
Assistant Professor of Physiology: F. A. HARTMAN.
Assistant Professor of Physiology: A. C. REDFIELD.
Demonstrator: MRS. LOIS FRASER.
Fellow: R. S. LANG.
Fellow: L. G. KILBORN.
Librarian: MRS. M. MCFARLANE.

The following courses of instruction each extending throughout the session are offered.

1. Systematic lectures; two a week during second and third years.
   a. General and neuro-muscular physiology.
   b. Physiology of circulation, respiration, digestion and secretion.
   c. Metabolism, the functions of the ductless glands and reproduction.
   d. Physiology of the central nervous system and special senses.
2. Advanced lectures; two a week (third year—optional).
3. General laboratory courses (total of 135 hours).
   a. Neuromuscular Physiology (second year).
   b. Circulation, respiration and digestion (second and third years).
   c. Nervous system and special senses (third year).
4. Demonstrations (arranged to supplement 1) one hour a week (second and third years).
5. Advanced laboratory courses (optional).
6. Research in Physiology.
7. Journal Club; one hour a week.

Every student must attain a certain standard in the laboratory exercises before he will be allowed to proceed to the University examinations in Physiology and Biochemistry.

Throughout the Session oral and, as may be necessary, written examinations will be held to ascertain the extent of the student's knowledge of Physiology, and the results of these, as well as his general work in the laboratory will be used to determine his position in the University Class Lists.

In the laboratory courses the students will be required to make good all loss through breakage or otherwise.

Text-books and Works of Reference: — Manual of Physiology, G. N. Stewart; Physiology and Biochemistry in Modern Medicine, J. J. R. Macleod; Starlings or Howells Physiologies; Bayliss' General Physiology; Luciani's Physiology (translated by F. Welby); Monographs in Physiology (edited by B. H. Starling). Other works important for consultation are Marshall's Physiology of Reproduction; Schäfer's Endocrine Organs; Text-Book of Physiology (edited by E. A. Schäfer); Recent and Further Advances in Physiology (edited by Leonard Hill).

Students are urged to become members of the Students Medical Library from which they may borrow, for home reading, books and monographs bearing on the subject of Physiology.

BIOCHEMISTRY.

Professor of Biochemistry: T. BRAILSFORD ROBERTSON.
Assistant Professor of Biochemistry: HARDOLPH WASTENEYS.
Demonstrator in Biochemistry: G. E. K. BRANCH.
Tutorial Fellows: A. I. MULDREW, F. W. WARD.

The following are the Courses of Instruction in this department for students of Medicine.

Second Year.

1. A general course of lectures in Biochemistry; two a week.
2. A general laboratory course in Biochemistry; six hours a week.

Third Year.

3. A course of advanced lectures on Biochemistry for Honour students; two a week.

4. An advanced laboratory course in Biochemistry for Honour students.

Every student must attain a certain standard in the laboratory exercises before he will be allowed to proceed to the University examinations in Biochemistry.

Throughout the Session oral and, as may be necessary, written examinations will be held to ascertain the extent of the student's knowledge of Biochemistry and the results of these as well as his general work in the laboratory, will be used to determine his position in the University Class Lists.

In the laboratory courses the students will be required to make good all loss through breakage or otherwise.

Text-books:—Robertson, Principles of Biochemistry; Robertson, Laboratory Directions in Biochemistry.

Works of Reference: General:—Hammarsten, Text-book of Physiological Chemistry, translated by Mandel; Mathews, Physiological Chemistry; Taylor, Digestion and Metabolism; Lusk, Science of Nutrition.

Special Subjects:—Armstrong, Simple Carbohydrates and the Glucosides; Leathes, Fats; Plimmer, Chemical Constitution of the Proteins; Weber,

article on "The Colloidal State" in the Chemistry of India Rubber; Robertson, The Physical Chemistry of the Proteins; Barger, The Simple Natural Bases; Underhill, The Physiology of the Amino Acids; Euler, General Chemistry of the Enzymes, translated by Pope; Arrhenius, Quantitative Laws in Biological Chemistry; Barcroft, The Respiratory Function of the Blood; Vincent, Internal Secretion and the Ductless Glands; Robertson, Chapter on "Growth and Development" in Volume 1 of Abt's System of Pediatrics; Loeb, The Organism as a Whole.

Laboratory Work:—Folin, a Laboratory Manual of Biological Chemistry; Hawk, Practical Physiological Chemistry; Plimmer, Practical Organic and Biochemistry.

ANATOMY.

Professor and Director of the Anatomical Department: J. PLAIRFAIR MCMURRICH.

Associate Professor of Clinical Anatomy: G. A. BINGHAM.

Assistant Professor in Anatomy: J. C. WATT.

Demonstrators: E. R. HOOPER, C. J. COPP, W. A. SCOTT, R. E. GABY, J. H. MCPHEDRAN, G. R. PHILP, G. E. WILSON, N. D. FRAWLEY, J. S. SIMPSON, W. F. PLEWES, F. W. WESTON, R. L. ROWNTREE, R. HARRIS, G. M. DALE, J. L. COTTON, R. O. FISHER, W. E. BROWN, R. J. P. MCCULLOCH.

Second Year.

Practical Work.—During the Second Year each student is obliged to dissect thoroughly the various regions of the body, following the plan outlined in a "Guide to the Dissection of the Human Body". Demonstrators will be in attendance each day for the purpose of superintending the work and of giving instruction, and will hold frequent examinations with the object of testing the student's progress. Certificates of credit in Practical Anatomy will be granted only to those students whose work has been completed to the satisfaction of the instructors in charge.

The Laboratory will be open from 9 a.m. until 5 p.m. every week-day throughout the session, with the exception of Saturdays when it will be closed at 12 noon.

Lectures.—In connection with the laboratory work lectures will be given by members of the staff, reviewing the work that has been completed. The object of this course will be to supplement the work in the Laboratory by calling attention to the relations and significance of the parts that have been studied and by elucidating with the aid of diagrams and models the anatomy of difficult and important structures.

Third Year.

Lectures.—During the Easter Term a course of lectures will be given on the Anatomy of the Central Nervous System.

Practical Work.—In connection with the above course of lectures the class will be divided into small sections, to each of which a Demonstrator will be assigned, for the purpose of a practical study of the Anatomy of the Brain.

In addition lectures and demonstrations will be given upon the anatomy of special regions and organs, special attention being given to the correlation of the structure and functional activities of the parts considered.

Opportunity will be afforded, when necessary, for the dissection of parts that were uncompleted in the practical course of the Second Year, or of which a further study seems advisable.

Text-books:—Piersol; Gray; Morris; Cunningham's Text-book; McMurrich's Development of the Human Body, Guide to the Dissection of the Human Body for the use of Students in the Anatomical Laboratory of the University of Toronto.

Reference Text-books:—Spalteholz, Hand-Atlas of Human Anatomy; Toldt's Atlas of Human Anatomy; Sobotta's Atlas and Text-book of Human Anatomy; Eycleshymer and Shoemaker, Cross-Section Anatomy; Quain's Anatomy; Barker's The Nervous System; Johnston, Nervous System of Vertebrates; Villiger, Brain and Spinal Cord; Herrick, Introduction to Neurology; Von Bardeleben's Handbuch der Anatomie; Rawlings, Landmarks; Treves, Applied Anatomy.

PHARMACY AND PHARMACOLOGY; MATERIA MEDICA.

Associate Professor: V. E. HENDERSON.
Lecturer: A. BRODEY.
Instructor in Pharmacy: J. A. MACDONALD.
Class Assistants: F. C. HARRISON, C. SHEARD, JR., J. W. RUSH.

Third Year.

Two courses of laboratory work accompanied by lectures and laboratory talks are given.

Practical Work.—LABORATORY COURSE I. Experimental pharmacology. In this course the student obtains an opportunity to become familiar with representatives of the drug-stuffs composing the various pharmacological groups. The chief object of the course is to get the student into the habit of accurate observation of the effects produced by drugs and to be able to describe them in accurate pharmacological language. In consequence a great deal of attention is given to the note books kept by each student.

LABORATORY COURSE II. Practical Pharmacy. This course is very brief, consisting only of a few hours' work on the chemical and physical incompatibles and in dispensing several mixtures, pills and ointments, in order that the student may obtain such insight into dispensing as is necessary to enable him to write prescriptions intelligently.

Total of these two courses, 90 hours.

Arrangements have also been made with the Toronto General Hospital and with the Hospital for Sick Children by which the students of this year will be drafted in turn to act as Assistants in the Hospital Dispensaries for a period of a week.

Lectures.—A course of lectures on general pharmacology (35 in all). This course is designed to supplement and extend the knowledge gained in the laboratory and from the prescribed text-book.

Prescription Writing.—Each student is expected to hand in answers to the problems in prescription writing announced each week. These are corrected and returned, and opportunity is given for the discussion of any difficulties with the staff during laboratory hours. Informal talks are also given from time to time as needed.

Text-books:—Pharmacy and Materia Medica, Henderson; Pharmacology, Dixon; Meyer and Gottlieb, translated by Halsey.

Reference Text-books:—Pharmacology, Cushny, Sollmann; Prescription Writing:—Bennett, Medical and Pharmaceutical Latin; Eggleston, Prescription Writing.

MEDICINE.

Professor of Medicine and Clinical Medicine: ALEXANDER MCPHEDRAN.

Associate Professor of Medicine and Clinical Medicine: J. T. FOTHERINGHAM.

Associate Professors of Clinical Medicine: ALLEN M. BAINES, W. B. THISTLE, R. J. DWYER, H. B. ANDERSON, GRAHAM CHAMBERS, WILLIAM GOLDIE, JOHN FERGUSON.

Associates in Clinical Medicine: H. C. PARSONS, W. J. MCCOLLUM, J. H. ELLIOTT, G. W. HOWLAND, H. S. HUTCHISON.

Demonstrators in Clinical Medicine: E. C. BURSON, F. A. CLARKSON, B. O'REILLY, D. KING SMITH, C. J. WAGNER, J. H. MCPHEDRAN, C. S. MCVICAR, G. S. STRATHY, W. F. MCPHEDRAN, G. W. ROSS, R. W. MANN, G. H. YOUNG, A. J. MACKENZIE.

Assistants in Clinical Medicine: J. A. OILLE, J. D. LOUDON, G. F. BOYER, M. B. WHYTE, T. J. PAGE, G. BATES, F. S. PARK, R. G. ARMOUR, F. S. MINNS, E. J. TROW, C. SHEARD, JR., T. J. GLOVER.

Professor of Therapeutics: R. D. RUDOLF.

Lectures.—In the Third Year during the Easter term a course of lectures is given as an introduction to the study of Medicine, dealing especially with the physiological aspects of disease.

During the first trimester one lecture weekly is given on physical examination, the explanation and interpretation of physical signs.

In the Fourth Year a course of forty lectures is given in the amphitheatre of the Toronto General Hospital, dealing with the general pathology and treatment of disease and serving as a fuller introduction to clinical study.

The lectures will be illustrated by plates, diagrams and morbid specimens; also by the presentation of patients when the nature of the subject under consideration makes it desirable.

Third Year.

In Clinical Medicine the instruction and work is carried on in the wards and in the Out-patient departments of the Toronto General, St. Michael's, and Western Hospitals, and in the University laboratories.

Medical Anatomy and Physical Diagnosis. Three forenoons in the week during the first half of the session are devoted to demonstrations in the surface anatomy of the body, in the methods of examination, and in the normal and abnormal physical signs with their significance. For this work the class is divided into small groups, each of which is in charge of an instructor.

In the second half of the session these exercises are continued and in addition, instruction is given in history taking, each student being required to take the history of patients and make the physical examinations, the work being supervised by one of the instructors.

In addition, courses of instruction are given in Pathological Chemistry and Clinical Microscopy and each student is required to do the clinical laboratory investigations relating to his own cases.

One clinic is held weekly in the hospital amphitheatre.

Text-books:—Medicine: Osler, Taylor.

Clinical Medicine:—Hutchison and Rainy, Clinical Methods.

Fourth Year.

The students of the Fourth Year devote the greater part of their time available for Clinical Medicine to the Medical wards, taking the histories, examining patients, and carrying out the clinical laboratory investigation of their cases under the direction of the House Physicians and the Assistant Clinical Instructors.

During each trimester, each student of the Fourth Year shall be required to prepare at least five complete records of Medical cases (history, physical examination and laboratory work) which has been certified as satisfactory by the service in which the work is done.

In addition to this work and instruction, regular clinics are given to ward classes, at which the students present the report of the cases considered. Weekly clinics are held in the hospital amphitheatres at which selected cases are presented. Each Fourth Year student attends the O. P. medical clinics daily for five weeks.

Classes consisting of one sixth of the year attend clinical demonstrations of Infectious Diseases at the City Isolation Hospital twice weekly for a period of five weeks.

Clinical Laboratory. Each Clinical Clerk is required to carry out a full laboratory investigation in connection with each patient assigned to him.

Clinical and Pathological Conference. Each week a clinical and patho-

logical conference will be held throughout the session. Abstracts of the histories of the fatal cases of the week, with diagnosis made before the autopsy, are read. The specimens are then demonstrated, followed by a discussion of the case.

Fifth Year.

In the Fifth Year the time will be devoted wholly to Clinical work in the wards and Out-patient departments of the hospitals and in the laboratories. Each student will be required to take charge of a number of patients, personally recording the results of his examination and laboratory work, and to attend and report on the autopsies of fatal cases.

Instruction will be given to classes in the wards and in the hospital amphitheatre.

In the Out-patient department, besides the general clinic, there are special clinics in Diseases of the Skin, of the Nervous System, in Tuberculosis and Syphilis, all of which groups of students will attend in rotation.

Text-books:—

Medicine: Osler, Taylor.

Clinical Medicine: Emerson, Clinical Diagnosis; Hutchison & Rainy, Clinical Methods.

Reference Text-books:—

Medicine: Forchheimer's Therapeusis of Internal Diseases, 5 vols.; Osler, Modern Medicine, 5 vols.; Albutt and Rolleston System; Latham and English, System of Treatment, 4 vols.; Mackenzie, The Heart; Sutherland, Dietetics; Starr, Nervous Diseases; Purvis Stewart, Diagnosis of Nervous Diseases; Thomas Lewis, Clinical Disorders of the Heart-beat. "A Handbook of Medical Treatment," by Da Costa.

Dermatology: Stelwagon, Crocker, Morris, Walker.

Instruments:—Students beginning clinical work are strongly advised to supply themselves with the following instruments: Microscope, with condenser and oil immersion lens; Haemoglobinometer, Dare; Haemocytometer, Zeis-Türck; Ophthalmoscope, Lorsch's; Laryngoscope; Stethoscope; Head Mirror; Thermometer; Tape Measure; Dermagraph. Special arrangements have been made for obtaining these instruments.

It is extremely desirable that each student should possess his own microscope, in order that the instrument which he uses during his laboratory work will be available for his use after graduation.

PAEDIATRICS.

Associate Professors of Paediatrics: A. M. BAINES, H. T. MACHELL.
Associate in Clinical Medicine: D. MCGILLIVRAY.
Demonstrator in Clinical Medicine: J. S. GRAHAM, ALAN BROWN.
Assistant in Clinical Medicine: A. W. CANFIELD, B. HANNAH.

Fourth Year.

Lectures.—This course comprises lectures to Fourth Year students on such subjects as diseases of the newly born, infant feeding, diseases of the digestive system, etc.

Clinical Work.—Daily clinics are held at the Hospital for Sick Children on Medical and Surgical cases by the Associate Professors and by other members of the Faculty who are on the staff of the Hospital for Sick Children.

Fifth Year.

The Fifth Year, in small groups, will attend the Out-patient Clinic daily at the Hospital for Sick Children and ward Clinics.

Text-books:—Diseases of Children, L. E. Holt; Chapin and Pisek; Still, Disorders of Infancy and Childhood; Kerley, Practice of Paediatrics.

Reference Text-books:—Medical Diagnosis and Treatment, Diseases of Children; Garrod, Battin and Thursfield, Diseases of Children.

THERAPEUTICS.

Professor of Therapeutics: R. D. RUDOLF.
Demonstrator in Anaesthesia: S. JOHNSTON.
Demonstrators of Therapeutics: C. E. C. COLE, G. W. ROSS,
Acting Head of Department.
S. R. D. HEWITT, W. V. WATSON, H. M. TOVELL.
Assistants in Anaesthesia: T. R. HANLEY, M. D. MCKICHAN.

Therapeutics is taught in the three final years, and is made as practical as possible.

Third Year.

Lectures.—A course of lectures is given to the Third Year during the Easter Term. This course comprises Specific Therapeuty and, when time permits, certain lectures on minor medicine.

Fourth Year.

Lectures.—In the Fourth Year a course of lectures is given in which the general principles of the subject are considered in a systematic way, emphasis being laid upon the fact that Therapeutics includes far more than the employment of drugs. The whole matter is considered more from the standpoint of disease than from that of drugs and other remedies. Diet, hydrotherapy, massage, electricity, anaesthesia and climate are also dealt with. Once a week fourth year students are given a practical demonstration at the hospital of methods of therapy, patients being freely used to illustrate the points.

Fifth Year.

Clinical Work.—In the final year the students are taken in groups at the General Hospital and the different methods of dealing with diseased conditions are demonstrated, generally upon actual patients. Here also prescription writing is practised. These demonstrations are quite informal and are conducted twice a week alternatively in the medical theatre at the hospital and in the wards. Students of the Fourth and Fifth years will receive individual practical instruction in the administration of anaesthetics.

Text-books:—Burney Yeo's Clinical Therapeutics, 2 volumes; Hare's Practical Therapeutics.

Reference Text-books:—Hutchinson & Collier's Index of Treatment, Lauder Brunton, Action of Medicines; Friedenwald and Rühran, Diet in Health and Disease; Wood, Therapeutics, its principles and practice; Potter, Ortner's Treatment of Internal Diseases; Cushny, Pharmacology and Therapeutics; Shoemaker, Materia Medica and Therapeutics; Hare, System of Therapeutics; Forchheimer's General and Special Treatment of Diseases; Forchheimer's Therapeusis of Internal Diseases; Sajous, Cyclopaedia of Practical Medicine; Appleton's Monographic Medicine.

SURGERY.

Professor of Surgery and Clinical Surgery: I. H. CAMERON.

Professor of Clinical Surgery: A. PRIMROSE.

Associate Professor of Clinical Surgery and Clinical Anatomy: G. A. BINGHAM

Associate Professors of Clinical Surgery: H. A. BRUCE, F. N. G. STARR, P. W. H. MCKEOWN, S. M. HAY.

Associate Professor of Clinical Surgery and in Charge of Orthopaedics: C. L. STARR.

Associates in Surgery and Clinical Surgery: C. B. SHUTTLEWORTH, J. F. UREN, T. B. RICHARDSON, G. SILVERTHORN, E. S. RYERSON, W. A. SCOTT, W. W. JONES.

Demonstrators in Clinical Surgery: W. E. GALLIE, A. B. WRIGHT, M. H. V. CAMERON, N. S. SHENSTONE, G. E. WILSON, R. E. GABY, J. A. ROBERTS.

Assistants in Clinical Surgery: A. S. MOORHEAD, A. H. PERFECT, D. E. ROBERTSON, OLIVER MABEE, P. K. MENZIES, ROBIN PEARSE, B. Z. MILNER, R. R. GRAHAM, F. A. CLELAND, J. A. MCCOLLUM, L. B. ROBERTSON, C. H. HAIR, J. W. HAYES, H. W. BAKER, C. B. PARKER, J. H. COTTON, T. A. J. DUFF.

Third Year.

Lectures.—A short course of lectures is delivered during the Michaelmas term on the general principles of Surgery.

Clinical Work.—In the Third Year each student receives three hours a week of Clinical instruction, on cases which illustrate—

1. Inflammation
2. Suppuration and Abscess
3. Surgical Diseases of the Skin; boils, carbuncles, etc.
4. Sepsis; infection and infective diseases
5. Wounds
6. Haemorrhage
7. Ulceration
8. Gangrene
9. Hernia
10. Surgical Landmarks
11. History Taking
12. Fractures
13. Bandaging
14. Instruments
15. First Aid.

Fourth Year.

Lectures.—Thirty lectures are given throughout the Session on some of the general principles of Surgery. Short courses are included on the special Surgery of certain regions of the body, *e.g.* the abdomen; the head and neck; the extremities, etc., the courses varying from year to year. The majority of the lectures are delivered at the Hospitals and are illustrated by Clinical Cases.

Practical Work.—A course of practical demonstrations will be given on the details of minor surgical technique under the following headings—

1. Principles of aseptic and antiseptic surgery.
2. Preparations for operations:
   (*a*) Patient—general preparation; field of operation.
   (*b*) Surgeon and assistants—hands; gloves; gowns; caps; masks; etc.
   (*c*) Instruments.
   (*d*) Room; tables; sterilizers; basins; irrigators; sheets, towels, etc.
3. Dressings; sutures; drains. Their preparation and uses.
4. Instruments.
5. Minor surgical technique.
   Hypodermics; local anaesthesia; lumbar puncture and spinal injections; transfusions, etc.
   Poultices; fomentations; stupes; blisters; cautery; leeches; cupping, etc.
   Enemata; douches, etc.
   Catheters; bougies; sounds, etc.
   Haemostasis; paracentesis, etc.
6. Bandaging.
7. First aid in accidents, drowning, etc.

Each student in this year will be required to take four complete histories during the year. These shall include the history, physical examination, differential diagnosis, description of the operative and non-operative treatment, progress notes, pathological findings, autopsy report and whatever clinical analysis may be necessary. These histories shall be presented

to the Clinician and shall be read and, if satisfactory, signed by him and may be used for teaching purposes in Clinic. The four approved histories must be deposited by the student with the Secretary of the Department before April 15th.

Clinical Work.—The time devoted to Clinical teaching in surgery is laid down in the time-table for the Fourth Year on page 90.

During this year an attempt is made to give the student a thorough familiarity with all the ordinary types of surgical conditions met with in general practice. He is taught to make a complete examination of any surgical patient in order that he may be able to arrive at a diagnosis and reasonably scientific treatment.

A special course in Orthopaedic Surgery is given at the Hospital for Sick Children.

Fifth Year.

The work of the Fifth Year in Surgery is entirely Clinical with the exception of one weekly mid-day lecture which is partly didactic and partly clinical. For the present the work incident to Dresserships and obligatory upon all candidates will be done in this year.

An elective course is given in operative surgery on the cadaver.

The duties of the Clinical Clerks attached to the various Surgical Services at the Toronto General, St. Michael's and the Sick Children's Hospitals shall be:

1. To act as assistants to the House Surgeon and to be prepared to carry out his instructions at all times.

2. To take the history of each patient within twenty-four hours of his admission to the wards. To record the physical examination and to do and record the necessary laboratory work.

3. To attend all the operations performed on his Service, and to be prepared to act as an assistant.

4. To do whatever dressings are detailed to him by the House Surgeon.

5. In the event of an autopsy on any patient who has been under his charge, to assist and make the necessary records.

6. To work when required in the Out-patient Department.

7. That he be required to attend the Clinics given to the Third and Fourth Years on his Service, and be prepared to give a detailed account of the cases being presented, to the Clinician, and, if necessary, under the direction of the Clinician, to act as Demonstrator. Further, that he shall be required to provide and prepare the material for each Clinic to the Third and Fourth Years.

8. That during his term of service he shall be prepared, when directed to do so, to assist in giving and to give anaesthetics to the patients on his Service under the supervision of the anaesthetist.

Text-books:—Rose & Carless; Spencer and Gask.; Da Costa; Alexis Thomson, Minor Surgery; F. T. Stewart's "Manual"; Foote; Russell Howard; Pye's Surgical Handicraft; Surgical Diagnosis, Gould; A Synopsis of Surgery, Ernest W. Hey Groves; The Students' Text-book of Surgery, Barnett; Surgical Materials and their Uses, Maclennan.

Reference Text-books:—

Surgery:—Principles of, by Senn, Nancrede, Bryan, Choyce; Practice of, by Treves, Erichsen; International Text Book, by Warren & Gould; Modern Surgery, by Roswell Park; American Practice of Surgery; Operative Surgery, Burghard, 4 vols.; Surgical Treatment, Cheyne & Burghard; Operative Surgery, by Treves, Rowlands and Turner; Bryant, Bickham, Binnie, Kocher, Alexis Thomson, v. Schmieden; Genito-Urinary Surgery, Thomson Walker; Chetwood's Urology; White and Martin, Keyes, Casper-Bonney, Taylor, Henry Morris, Morton; Orthopædic Surgery, Bradford & Lovett, Whitman, Jackson Clarke; Fractures and Dislocations, Stinson; Dislocations and Joint Fractures, Cotton; Treatment of, Schudder; Diseases of the Rectum and Anus, Gant, 3rd ed.; Surgery of the Chest, Paget, Carl Beck; Lungs, Fowler & Godlee; General Surgery, J. C. Warren, Lexer-Bevan; Preparatory and after treatment in Operative Cases, Haubold, Crandon; Surgery of the Brain, Krause, Rawlings; Spine; Elsberg; Clinical Surgical Diagnosis, de Quervain (trans.); International Clinics.

PATHOLOGY.

Professor of Pathology and Bacteriology and Curator of the Museum and Laboratories: J. J. MACKENZIE.
Lecturer in Bacteriology: D. A. GRAHAM.
Acting Lecturer in Bacteriology: H. K. DETWEILER.
Demonstrators of Pathology: H. J. SHIELDS, O. R. MABEE.
Assistants in Pathology: G. W. LOUGHEED, ROSCOE GRAHAM, W. F. MCPHEDRAN, H. W. BAKER.
Fellow in Pathology:
Assistant in Clinical Laboratory: D. H. BODDINGTON.
Assistant Curator of the Pathological Museum:

The courses of instruction are as follows:—

Second Year.

Students receive a course of lectures and practical laboratory exercises during the Easter Term in general Bacteriology, including media making, staining and cultivation of pathogenic micro-organisms, the practical isolation and identification of the most important bacteria pathogenic to man.

Third Year.

Lectures.—1. A course of lectures in General Pathology is given during the Michaelmas and Easter Terms.

Practical Work.—2. A laboratory course in Pathological Histology is held four afternoons a week during the Easter Term, illustrating general pathological conditions, including inflammations (acute and chronic) repair, tumors, etc.

3. A practical laboratory class in haematology and clinical microscopy.

Fourth Year.

Lectures.—1. A course of didactic lectures is delivered upon selected chapters of special pathology.

Practical Work.—2. A laboratory course in Pathological Histology takes place four afternoons a week during the Michaelmas Term. The work taken up in this class illustrates the special pathology of the organs. Alternating with this class are a series of Museum Demonstrations arranged to illustrate the course in Pathological Histology.

3. Throughout the Session autopsies are held at the three Hospitals which students are required to attend and take full notes. On the autopsies they have witnessed they are subsequently examined.

4. Once a week during the Easter Term a Clinical conference on autopsy material is held at the General Hospital.

Fifth Year.

1. The routine work for all students of the Fifth Year will consist of attendance and assistance at autopsies. Upon such cases as the students have studied in the wards full bacteriological and histological studies will be required.

2. A weekly conference in autopsy material will be held for the whole class.

3. Advanced classes will be held for students who have Honour standing, and for such other students whose work is of such a character as to permit them to do elective work.

An advanced laboratory class in surgical pathology may be arranged for similar students who can fulfil the same conditions.

Text-books:—

Pathology:—Adami, Pathology (General), vol. I.; (Special), vol. II.; Adami & McCrae, Text-book of Pathology; Delafield & Prudden, 8th ed.; MacCallum, A Text-book of Pathology; Mallory, Text-book of Pathological Histology; Pembrey & Ritchie, General Pathology.

Bacteriology:—Hiss and Zinsser; Muir and Ritchie; Park: Ricketts and Dick, Infection, Immunity and Serum Therapy.

Clinical Methods:—Emmerson; Hutchison and Rainy; Sahli.

PATHOLOGICAL CHEMISTRY.

Professor of Pathological Chemistry: A. Hunter.
Lecturer in Pathological Chemistry: C. G. Imrie.
Demonstrators of Pathological Chemistry: F. W. Rolph, D. H. Boddington.

Third Year.

Practical Work.—Students receive practical instruction in the chemical methods employed in the examination of excreta, secretions, organs and body fluids, with special reference to the study and diagnosis of disease.

As occasion requires, the laboratory exercises are coordinated and supplemented by demonstrations and lectures.

The student will not be permitted to proceed to the University examination unless he has satisfactorily performed all the work of the class, and has paid for any apparatus he may have lost, damaged, or destroyed.

Fourth Year.

Lectures.—A course of lectures, extending throughout the year, is given on general disorders of the chemical processes of the body.

Practical Work.—One laboratory period per week for one trimester is devoted to a review and extension of the work of the third year.

Clinical Laboratory.—To each student of the Fourth and Fifth years there is assigned, in the Department of Pathological Chemistry, a locker with apparatus and reagents, which he is expected to utilize in the conduct of all chemical examinations necessary to the proper study of the cases under his charge. For the guidance of the Fourth Year student in such work an instructor is in regular attendance at a special hour each day. Reports of each student's work are preserved, and are considered in determining his standing at the end of the year.

Fifth Year.

In addition to the routine clinical laboratory work, an advanced laboratory course is offered for students whose record is such as to permit them to do elective work. At the end of the Fifth year the student is required in surrendering his locker, to make good all loss of apparatus by breakage or otherwise. Until he has done so, he will not be permitted to sit for the final examinations.

Text-books:—Hawk's Practical Physiological Chemistry together with the standard works on Physiology and Pathology, and Krehl's Clinical Pathology, trans. by Hewlett (Lippincott & Co.).

Reference Books:—Oppenheimer, Handbuch der Biochemie; Von Noorden, Metabolism and Practical Medicine (trans. by Walker Hall) 3 vols.; Neubauer and Huppert, Analyse des Harns; Schmidt and Strasburger, Die Fazes des Menschen; Von Fürth (trans. Smith), Physiological and Pathological Chemistry of Metabolism; Wells, Chemical Pathology; Neuberg, Der Harn.

PSYCHIATRY.

Professor of Psychiatry: C. K. CLARKE.
Extra-Mural Professor of Psychiatry: N. H. BEEMER.
Associate of Psychiatry: J. M. FORSTER.
Special Lecturer in Psychology: C. M. HINCKS.
Demonstrator: HARVEY CLARE.

Fourth Year.

Lectures.—A series of didactic lectures is given, outlining some of the more important psychoses.

Fifth Year.

Clinical Work.—A clinical course will be given. The student will be afforded opportunity to obtain a practical knowledge of psychiatry, and to study the laboratory and clinical methods employed in the diagnosis and treatment of various forms of insanity.

Text-book:—Clinical Psychiatry, Diefendorf.

MEDICAL JURISPRUDENCE.

Professor: N. A. POWELL.

Fourth Year.

Lectures.—About eighteen lectures and class-room demonstrations will be given. These will be illustrated as required by lantern slides and by specimens from the Pathological Museum or from private collections.

The lecture course will embrace *inter alia* a discussion of:—Legal Criminal procedures and the relation of Medical men thereto. Medical evidence, documentary and oral, ordinary and expert. Personal identity of the living and of the dead. Thanatology: The reality of death; *post mortem* changes, autopsies and reports. Causes producing deaths by violence such as the various forms of asphyxia, heat, cold, electricity, etc. Wounds in their medico-legal relations. Blood stains and the examination of blood. Medico-legal aspects of the sexual functions, impotency, sterility and legitimacy. Pregnancy, abortion and infanticide. Rape and allied offences against chastity. Civil and criminal malpractice.

Text-books:—Glaister, Reese, Emerson, Draper; Buchanan's Text-book of Forensic Medicine and Toxicology.

Reference Text-books:—Taylor's Principles; Whitthaus and Becker; Peterson and Haines; Dixon Mann; Cattell's *Post Mortem Pathology*; Greene's Life Insurance; Atkinson's Law in Medical Practice; Cathell's The Physician Himself; Brother's Medical Jurisprudence; Wadsworth's Post Mortem Examinations.

TOXICOLOGY.

Professor of Toxicology: W. H. ELLIS.
Associate Professor of Pharmacology: V. E. HENDERSON.

Two courses of lectures and demonstrations are now given.

COURSE 1. The Chemical detection of poisons, including the identification of the common poisons in their pure state, and their separation from organic matter.

COURSE 2. The pharmacology, symptomology, pathology and therapeutics of poisoning. Only the more important poisons are dealt with in this course.

HYGIENE.

Professor: JOHN A. AMYOT.
Associate Professor: J. G. FITZGERALD.
Demonstrator and Temporary Lecturer: R. D. DEFRIES.

This Department provides a course embracing a series of lectures covering health laws and regulations, vital statistics and the general problems of Hygiene and Preventive Medicine to the candidates for the M.B. degree.

It provides lecture courses in first aid, hygiene and sanitation to students in the Engineering, Forestry, Architecture, Household Science, and Education departments of the University.

Laboratory facilities and instruction are provided for students of the department of Engineering, qualifying as Sanitary Engineers. The course of instruction to graduates in medicine leading to the Diploma of Public Health, which was discontinued during the war, will be resumed. Details of the curriculum leading to the Diploma of Public Health will be found on page 53.

Text-books:—Rosenau, Preventive Medicine and Hygiene, 4th edition, 1918; Parkes and Kenwood, Hygiene and Public Health; Prescott and Winslow, Elements of Water Bacteriology; American Public Health Association, Standard Methods of Water Analysis.

Reference Text-books:—Kolmer, Infection, Immunity and Specific Therapy; Ledingham and Arkwright, The Carrier Problem in Infectious Diseases; Whipple, Microscopy of Drinking Water; Chandler, Parasitology and Human Disease.

CONNAUGHT LABORATORIES.

Director: J. G. FITZGERALD.
Associate Director: R. D. DEFRIES.
Research Associates: A. H. CAULFEILD, R. A. HODGE, D. T. FRASER.

The scope of the activities of the Connaught Laboratories is similar to that of the Lister Institute, London, England, the Pasteur Institute of Paris, and the Rockefeller Institute of New York. Although primarily

established for research in the field of preventive medicine, these Laboratories are also engaged in the production and distribution of all essential public health biological products, at practically cost price. The distribution of diphtheria antitoxin was commenced in April 1914, and since that date the production of additional biological products has been undertaken and the distribution extended throughout Canada and Newfoundland.

The products distributed include: diphtheria antitoxin, tetanus antitoxin, anti-meningitis serum, smallpox vaccine, anti-pneumococcus serum, typhoid vaccine, and rabies vaccine.

Since February 1st, 1916, the Provincial Board of Health of Ontario has distributed, free of charge in Ontario, all of the above-named products. The Secretaries of Local Boards of Health need only make application to the Chief Officer of Health, Parliament Buildings, Toronto, and supplies will be sent them. Physicians and Hospitals are supplied by the Secretary of their Local Board of Health.

Similarly in September 1917, the Bureau of Public Health, Saskatchewan, began free distribution of diphtheria antitoxin in that Province. (The antitoxin so supplied is prepared by these Laboratories.)

The Department of Militia and Defence was supplied with tetanus antitoxin and other biological products used by the Canadian Expeditionary Force Overseas and in training in Canada.

In October 1917, a farm of over fifty acres and completely equipped Laboratories and Stables were presented to the University by Colonel Albert Gooderham. These Laboratories were given to provide facilities for research in Preventive Medicine, especially along the lines of serum therapy, and also to provide for the production of serums and vaccines. In connection with these Laboratories there has been established the Connaught Laboratories Research Fund of one hundred thousand dollars the income on which is to be utilized for the support of research work in Preventive Medicine.

OBSTETRICS AND GYNAECOLOGY.

Professor of Obstetrics and Gynaecology: B. P. WATSON.
Associate Professors of Obstetrics: H. T. MACHELL, K. C. MCILWRAITH.
Associate Professor of Gynaecology and Obstetrics: A. A. MACDONALD.
Associate Professor of Gynaecology: F. W. MARLOW.
Associate in Obstetrics: J. A. KINNEAR.
Demonstrators in Obstetrics: M. M. CRAWFORD, W. J. MABEE, S. J. N. MAGWOOD.
Associates in Gynaecology: W. B. HENDRY, F. A. CLELAND.
Demonstrator in Gynaecology: A. C. HENDRICK.
Assistant Demonstrator in Obstetrics and Gynaecology: W. A. SCOTT, J. G. GALLIE, W. W. LAILEY.
Assistant Demonstrators in Gynaecology: H. E. CLUTTERBUCK, R. W. WESLEY, N. D. FRAWLEY.

Fourth Year.

Lectures.—Obstetrics:—A course of lectures illustrated by diagrams, lantern slides and models will be given. A syllabus indicating the scope of the work is provided. Stated generally, the course consists of two parts. The first part deals with the anatomy and physiology of the female organs of reproduction; the anatomy, physiology and management of normal pregnancy, labour and the puerperium, and the care of the infant. The second part is concerned with abnormal conditions arising duri ng pregnancy, labour, and the puerperium, and with maladies of the infant.

Practical demonstrations on anatomy, the mechanism of labour, the use of obstetrical instruments, etc., will be given to small sections of students.

Gynaecology:—A course of lectures illustrated by pathological specimens, diagrams and lantern slides will be given. A syllabus is provided. The lesions of each organ are considered in detail and the methods of gynaecological diagnosis and treatment indicated.

Clinical Work.—Obstetrics:—The student attends clinics at the Toronto General Hospital or at St. Michael's Hospital. At these clinics practical instruction is given in the examination of patients, the diagnosis of pregnancy, the management of labour and the puerperium and the care of the infant.

Gynaecology:—Clinical instruction is given at the Toronto General Hospital, and the Western Hospital, in the method of case taking, the examination of patients, the use of instruments, and in the conduct of operations.

Pathological Demonstrations:—The naked eye and microscopic pathology of the common obstetrical and gynaecological lesions will be demonstrated in the museum.

Fifth Year.

Obstetrics.—The student attends the Obstetrical Hospital for a period of five weeks during which time he is given an opportunity of seeing all the work of the hospital, and of assisting in the management and treatment of cases. He is also required to attend patients in their own homes and to perform other duties in connection with the Out-Patient Service. Clinical lectures are given once a week on interesting and abnormal cases.

Gynaecology.—Clinical instruction in the examination and diagnosis of gynaecological cases is given to small sections of students. Each student is required to act as clinical clerk to the cases assigned him, to be present at any operations required, and to follow the after-treatment. Operations will be performed on stated days and at these the members of the clinic may be present.

Pathological Demonstrations:—A series of demonstrations in continuity with those held during the fourth year will be given in the museum.

Text-books:—

Obstetrics:—Eden; Berry Hart; Hirst; Edgar; Whitridge Williams; Jellett; Galabin; Adam Wright.

Gynaecology:—Barbour & Watson; Dudley; Gilliam; Crossen; Penrose; Eden & Lockyer; Hart & Barbour; Ashton; Montgomery.

Reference Text-books:—

Obstetrics:—Bumm; Winckel; Munro Kerr, Operative Obstetrics; Davis, Operative Obstetrics; Lea, Puerperal Infection; Ballantyne, Antenatal Pathology.

Gynaecology.—Kelly, Operative Gynaecology; Berkeley & Bonney, Gynaecological Surgery; Winter & Ruge, Gynaecological Pathology, translated by Clark; Cullen, Cancer of the Uterus.

OPHTHALMOLOGY AND OTOLOGY.

Professors: J. M. MACCALLUM, G. H. BURNHAM.
Demonstrators: COLIN CAMPBELL, D. N. MACLENNAN, M. LYON, W. W. WRIGHT, F. A. AYLESWORTH.

Fourth Year.

Ophthalmology:

Instruction will be given by quizzes, recitations or lectures. The class will be divided into small sections. In each section the applied anatomy of the eye, orbit and surrounding structures will be considered, followed by instruction in the use of the ophthalmoscope, retinoscope and other instruments of diagnosis. The methods of external examination of the eye, the use of the test type, test lenses and the principles of refraction will be thoroughly dealt with.

Fifth Year.

Instruction will be wholly clinical and practical, and will include Ophthalmoscopy and its relations to general medicine, advanced refraction. Each student will be required to determine the refraction of patients in the Out-Patient Clinic and must, for this purpose, supply himself with an ophthalmoscope and a retinoscope. When possible the students will be shown the more usual operations on the eye.

There will be a short course of didactic lectures. Clinically, otology is grouped with diseases of the nose and throat.

Ophthalmology:—

Text-books:—J. Edward Jackson; May; Mayou; Nettleship; Parker; Parsons; Swanzy; Veasey; Wood & Woodruff; Sym; Marshall.

Works of Reference:—de Schweinitz; Weeks; Fuchs; Posey & Wright; Theobald; Ball.

Otology:—

Manuals:—Bacon; Albert Gray.

Works of Reference:—Politzer; Ballengar; Barnhill & Wales.

OTO-LARYNGOLOGY.

Professor: D. J. GIBB WISHART.
Demonstrators: PERRY G. GOLDSMITH, GILBERT ROYCE, GEORGE M. BIGGS.
Assistants: J. SPROULE-MANSON, ANGUS CAMPBELL, J. C. CALHOUN, ED. BOYD, A. D. MCKELVEY, W. G. MCKECHNIE.

The course of instruction in oto-laryngology is carried on in the Toronto General Hospital, where the facilities placed at the disposal of the students are unusually complete. There is an indoor service of twenty beds, and in the outdoor, in addition to the large clinic, where the fifth year students receive instruction, there is a room set aside for the fourth year classes, with eight cubicles for examination purposes.

This course is carried on during both the fourth and fifth years of the curriculum.

Fourth Year.

In the fourth year the students will receive instruction in:

(1) The normal anatomy of the ear, nose and throat.

(2) The methods of using the head mirror and the various instruments required in examining the ear, nose and throat.

(3) The ordinaty tests for hearing.

(4) The recognition of the ear, nose and throat, in their normal conditions, as exemplified by clinical material.

At the close of each class instruction, a clinical examination may be held.

Fifth Year.

In the fifth year the students will be divided into small groups for the purpose of studying the commoner pathological conditions affecting the various organs, and as much clinical material as possible will be utilized for the purposes of personal observation.

A series of lectures will be delivered upon the various diseases of the ear, nose and throat, ordinarily met with by the general practitioner.

At the final (fifth year) examination the test will be clinical.

Text-books:—Porter, Diseases of the Throat, Nose and Ear; Lake, Diseases of the Ear; Parker, Throat and Nose; Gray, Ear; Coolidge, Diseases of the Nose and Throat.

For Reference:—St. Clair Thompson, Throat and Nose; Lambert Lack, Throat and Nose; Watson Williams, Throat and Nose; Phillips, Throat, Nose and Ear.

LECTURES IN DENTISTRY.

The Faculty have arranged for a course of lectures to be delivered during the Session, on the application of Dentistry to Medicine. The instruction will be given by a man properly qualified for the purpose and will be delivered to the students of the final year. The course will be obligatory.

FIRST YEAR TIME-TABLE, SESSION 1919-1920.

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9-10	Physics	English Mathematics	Biology	English Mathematics	Biology Pr. B. Chemistry Pr. A.	Biology
10-11	Physics Practical	Scien. French Scien. German	Biology Pr. A.	Physics	Biology Pr. B. Chemistry Pr. A.	Physics
11-12	Physics Practical	Biology	Biology Pr. A.	History	Biology Pr. B. Chemistry Pr. A.	Scientific French Scientific German
12-1	Physics Practical	Chemistry	Biology Pr. A.	Chemistry	Physics	History of Civilization
2-3	Biology Pr. A. Chemistry Pr. B.	History	Chemistry Pr. B.	Biology Pr. B. Chemistry Pr. A.	Physics Practical	
3-4	Biology Pr. A. Chemistry Pr. B.	History of Civilization	Chemistry Pr. B.	Biology Pr. B. Chemistry Pr. A.	Physics Practical	
4-5	Biology Pr. A. Chemistry Pr. B.	Gymnasium	Chemistry Pr. B.	Biology Pr. B. Chemistry Pr. A.	Gymnasium	

N.B.—Hours for English Expression will be arranged.

SECOND YEAR TIME-TABLE, SESSION 1919-1920.

Michaelmas Term.

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9–10	Physiology	Biochemistry	Physiology	Biochemistry	Biochemistry	Anatomy Pr.
10–11	Anatomy	Physiol. Pr. B. Bact. (½ A.)	Physiol. Pr. B. Bact. (½ A.)	Anatomy	Histology	Anatomy Pr.
11–12	Hist. Pr. A. Biochem. Pr. B.	Physiol. Pr. B. Bact. (½ A.)	Physiol. Pr. B. Bact. (½ A.)	Biochem. Pr. B. Bact. (½ A.)	Hist. Pr. B. Bact. (½ A.)	Anatomy Pr.
12–1	Hist. Pr. A. Biochem. Pr. B.	Physiol. Pr. B. Bact. (½ A.)	Physiol. Pr. B. Bact. (½ A.)	Biochem. Pr. B. Bact. (½ A.)	Hist. Pr. B. Bact. (½ A.)	
2–5	Anatomy Pr.	Biochem. Pr. A.	Anatomy Pr.	Anatomy Pr.	Biochem. Pr. A.	

Easter Term.

9–10	Physiology	Biochemistry	Physiology	Biochemistry	Biochemistry	Anatomy Pr.
10–11	Anatomy	Physiol. Pr. B. to February 8th Physiol. Pr. A. Bact. (½ B.)	Physiol. Pr. B. to February 8th Physiol. Pr. A. Bact. (½ B.)	Anatomy	Histology	Anatomy Pr.
11–12	Hist. Pr. B. Biochem. Pr. A.	Physiol. Pr. A. Bact. (½ B.)	Physiol. Pr. A. Bact. (½ B.)	Biochem. Pr. A. Bact. (½ B.)	Hist. Pr. A. Bact. (½ B.)	Anatomy Pr.
12–1	Hist. Pr. B. Biochem. Pr. A.	Physiol. Pr. A. Bact. (½ B.)	Physiol. Pr. A. Bact. (½ B.)	Biochem. Pr. A. Bact. (½ B.)	Hist. Pr. A. Bact. (½ B.)	Physiology
2–5	Anatomy Pr.	Biochem. Pr. B.	Anatomy Pr.	Anatomy Pr.	Biochem. Pr. B.	

THIRD YEAR CLINICAL TIME-TABLE, SESSION 1919-1920.

First Ten Weeks.

Sep. 30 to Dec. 6

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9 to 10.30	Surgery 7-12 Pharmac. 1-6	Medicine 7-12 Surgery 1-6	Surgery 1-12	Medicine 1-12 Clinical Lecture	Surgery 1-6 Pharmac. 7-12	Medicine 1-6 Surgery 7-12
10.30 to 12	Medicine 7-12 Pharmac. 1-6	11 a.m. Anatomy 1-12	Medicine 1-12 Clinical Lecture	Work Hour 10-11 Anat. 11-12	Medicine 1-6 Pharmac. 7-12	Medicine 7-12

Second Ten Weeks.

Dec. 8 to Feb. 28

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9 to 10.30	Surgery 7-12 Clin. Lab. 1-6	Surgery 1-6 Pharmac. 7-12	Surgery 7-12 Pharmac. 1-6	Medicine 7-12 Clinical Lecture Path. Chem. 1-6	Surgery 1-6 Path. Chem. 7-12	Clin. Lab. 7-12 Surgery O.P.D. 1-6
10.30 to 12	Medicine 7-12 Clinical Lab. 1-6	Medicine 1-6 Pharmac. 7-12	Medicine 7-12 Pharmac. 1-6	Medicine 7-12 Path. Chem. 1-6	Medicine 1-6 Path. Chem. 7-12	Clin. Lab. 7-12 Medicine 1-6

Third Ten Weeks.

Mar. 1 to May 8.

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9 to 10.30	Surgery 1-6 Clin. Lab. 7-12	Surgery 1-6 Pharmac. 7-12	Surgery 7-12 Pharmac. 1-6	Medicine Clinical Lecture 1-6 Path. Chem. 7-12	Surgery 7-12 Path. Chem. 1-6	Clin. Lab. 1-6 or O.P.D. Surgery as notified 7-12
10.30 to 12	Medicine 1-6 Clin. Lab. 7-12	Medicine 1-6 Pharmac. 7-12	Medicine 7-12 Pharmac. 1-6	Medicine 1-6 Path. Chem. 7-12	Medicine 7-12 Path. Chem. 1-6	Clin. Lab. 1-6 Medicine 7-12

THIRD YEAR DIDACTIC TIME-TABLE.

Michaelmas Term.

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
12–1		Physiology	Physiology		
1–2	Pharmacology			Physiology	General Pathology
2–3	Anatomy	Physiology	Surgery	Physiology	Anatomy
3–4	Anatomy	Anatomy	Anatomy	Physiology	Anatomy
4–5	Anatomy	Anatomy	Anatomy	Physiology	

Easter Term.

12–1		Psychology ($\frac{1}{2}$ Term) Neurology ($\frac{1}{2}$ Term)		Physiology	
1–2	General Pathology		Pathological Histology		General Pathology
2–3	Pathological Histology	Physiology, 4 weeks Surgery	Pathological Histology	Physiology	Pathological and Bacteriological Laboratory
3–4	Pathological Histology	Physiology	Medicine	Pathological Histology	
4–5	Therapeutics		Pharmacology	Pathological Histology	

FOURTH YEAR CLINICAL TIME-TABLE, SESSION 1919-1920.

Ten Weeks.

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9–10	Medicine	Infect. Diseases	Medicine	Medicine	Infect. Diseases	Medicine
10–11	Work Hour	Work Hour	Work Hour	Work Hour	Work Hour	Work Hour
11–12	Obstetrics	Surgery	Surgery	Path. Chemistry	Surgery	Surgery
12–1						Medicine Clinical Lect. T.G.H.

Ten Weeks.

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9–10	Surgery	Medicine	Clin. Therap.	Medicine	Medicine	Medicine
10–11	Eye Nose	Eye Nose	Work Hour	Eye Nose	Eye Nose	Work Hour
11–12	Nose	Nose	Surgery	Eye Nose	Eye Nose	Surgery
12–1						Medicine Clinical Lect. T.G.H.

FOURTH YEAR CLINICAL TIME-TABLE, SESSION 1919-1920—*Continued.*

Ten Weeks.

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9–10	Medicine St. M.H. 2/3 class W.H. 1/3 class	Medicine St. M.H. 2/3 class W.H. 1/3 class	9-10.30 Surgery H.S.C.	Medicine St. M.H. 2/3 class W.H. 1/3 class	9-10.30 Paed.	Medicine St. M.H. 2/3 class W.H. 1/3 class
10–11	Work Hour	Work Hour		Work Hour		Work Hour
11–12	Gynaec.	Surgery St. M.H. 2/3 class W.H. 1/3 class	10.30-12 Paediatrics	Surgery St. M.H. 2/3 class W.H. 1/3 class	10.30-12 Surgery H.S.C.	Surgery St. M.H. 2/3 class W.H. 1/3 class
12–1						Medicine Clin. Lect. T.G.H.

N.B.—Work Hour—Physical Diagnosis and Laboratory.

SYSTEM OF CHANGING CLASSES FOR FOURTH YEAR.

Date	Medicine Surgery Obstetrics Clinical Therapeutics	Medicine Surgery Eye Ear, Nose and Throat	Medicine Surgery Gynaecology Paediatrics
September 30 to December 6	B	A	C
December 8 to February 28	C	B	A
March 1 to May 8	A	C	B

FOURTH YEAR DIDACTIC TIME-TABLE

Michaelmas Term

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1–2	Pathological Histology	Pathological Histology	Pathological Histology	Pathological Histology	Pathological Chemistry
2–3	Pathological Histology	Pathological Histology	Pathological Histology	Pathological Histology	Surgery
3–4	Obstetrics	Therapeutics	Gynaecology	Obstetrics	Medicine
4–5	Clinical Laboratory	Clinical Laboratory	Clinical Laboratory	Clinical Laboratory	Clinical Laboratory
			Easter Term.		
12–1	Therapeutics	Neurology	Clinical Laboratory	Clinical Therapeutics	Clinical Laboratory
2–3	Med. Jurisprudence	Special Pathology	Clinical Conference on Autopsy Material	Hygiene	Hygiene
3–4	Gynaecology	Psychiatry, 6 weeks Medicine, 10 weeks	Special Pathology	Paediatrics, 6 weeks Medicine, 10 weeks	Pathological Chemistry
4–5	Paediatrics, 6 weeks Toxicology, 8 weeks	Clinical Laboratory	Psychiatry, 6 weeks Surgery, 10 weeks	Obstetrics	Obstetrics

N.B.—All clinics begin promptly on the hour.

No change is to be made in this time-table without the consent of the Faculty Council.

FIFTH YEAR CLINICAL TIME-TABLE, SESSION 1919-1920.

Ten Weeks.

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9–12	Medicine	Medicine	Medicine	Medicine	Medicine	Medicine
2–4	Medicine	(Tuberculosis Clinic)	Medicine	Medicine	(Tuberculosis Clinic)	

Ten Weeks.

9–12	Surgery	Surgery	Surgery	Surgery	Surgery	Surgery
2–4	Neurology	Pathology	Neurology	Neurology	Pathology	

Ten Weeks.

First Five Weeks.

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
9–10	Paed. 1-4 Nose 5-8 Eye 9-12	Paed. 5-8 Nose 9-12 Eye 1-4	Paed. 9-12 Nose 1-4 Eye 5-8	Paed. 5-8 Nose 1-4 Eye 9-12	Paed. 9-12 Nose 5-8 Eye 1-4	Paed. 1-4 Nose 9-12 Eye 5-8
10–11	Paed. 1-4 Nose 5-8 Syphilis 9-12	Paed. 5-8 Nose 9-12 G.U. 1-4	Paed. 9-12 Nose 1-4 Syphilis 5-8	Paed. 5-8 Nose 1-4 G.U. 9-12	Paed. 9-12 Nose 5-8 Syphilis 1-4	Paed. 1-4 Nose 9-12 G.U. 5-8
11–12	Therap.	Dermat. 9-12	Clin. Therap.	Dermat. 1-4	Clin. Therap.	Dermat. 5-8
2–4	Dermatology			Psychiatry T.G.H. (Feeble-minded Clinic)	Psychiatry	

Second Five Weeks.

Obstetrics and Gynaecology

LECTURE TIME-TABLE.

	HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
	12-1	Medicine. Clinical Lecture.	Medicine. Clinical Lecture.	Surgery. Clinical Lecture.	Clinical Conference on Pathological Material	Obstetrics.
October 6th-17th	4-5	Otology	Otology	Otology	Otology	Otology
October 20th-31st	4-5	Ophthalmology	Ophthalmology	Ophthalmology	Ophthalmology.	Ophthalmology
November 3rd-7th	4-5	*Anaesthesia	*Anaesthesia	*Anaesthesia	*Anaesthesia	*Anaesthesia
November 10th-21st	4-5	Oto-Laryngology	Oto-Laryngology	Oto-Laryngology	Oto-Laryngology	Oto-Laryngology
November 24th-December 5th	4-5	*History of Medicine	*History of Medicine	*History of Medicine	*History of Medicine	*History of Medicine
December 8th-12th	4-5	*Dentistry	*Dentistry	*Dentistry	*Dentistry	*Dentistry
December 15th-19th	4-5	*Medical Ethics	*Medical Ethics	*Medical Ethics.	*Life Insurance	*Life Insurance

SYSTEM OF CHANGING CLASSES.

Date.	Medicine.	Surgery. Pathology. Neurology.	Eye, Ear, Nose and Throat. Gynaecology. Gynaecological Pathology. Dermatology. Clinical Therapeutics. Psychiatry Obstetrics. Paediatrics. Syphilis. Genito-urinary Surgery.
Sept. 30 to Dec. 6.	Nos. 32 to 62	Nos. 63 to 94	Nos. 1 to 31.
Dec. 8 to Feb. 28.	Nos. 63 to 94	Nos. 1 to 31.	Nos. 32 to 62
Mar. 1 to May 8.	Nos. 1 to 31.	Nos. 32 to 62.	Nos. 63 to 94

*Questions on these subjects may be set on the papers in Medicine and Surgery.

THE MEDICAL BUILDING.

The Medical Building is situated between the University Library and the anatomical wing of the Biological Department.

It is three storeys in height in front, with an additional storey and sub-basement in the wings, which extend eastward. Two large lecture rooms are provided which flank the main building; the larger has accommodation for about three hundred and fifty students; the smaller for about two hundred students.

In the south wing, in what may be called the basement storey, are situated lavatories, recreation rooms and reading rooms for the students; in the same storey in the north wing is placed the Antitoxin laboratories.

The three main floors of the building are arranged upon what has been called the unit-system, a unit-room being thirty feet long by twenty-three feet deep, lighted on its long face by large windows.

These rooms may be united so as to form large laboratories or may be cut in two where it is necessary to have smaller rooms.

The south wing and the main portion of the building are occupied by the Department of Physiology and Biochemistry whilst the north wing accommodates the final departments of Medicine.

On the ground floor in the main portion are situated in front the Secretary's office, a large faculty room, a lavatory, and a library.

In the north wing in this floor are placed a chart and preparation room behind the lecture theatre, and on the third floor units are occupied by the Department of Pharmacology.

An interesting feature of the building is the provision which is made for research students by the presence of a series of small rooms in front of the south lecture room, each large enough to accommodate one or two workers.

As will be seen from the above description, a series of laboratories and lecture theatres is provided on the University grounds where the most ample facilities are afforded for both the practical and didactic instruction of students.

As heretofore, lectures and demonstrations will be given in the east wing of the Biological building in Biology and in the west wing in Anatomy; in the Chemical Laboratories in Chemistry and in the Physics building in Physics. It is impossible to provide more complete and efficient accommodation for the teaching of scientific medicine than that which exists in the University of Toronto to-day.

THE LIBRARY.

The University Library is contained in a building of its own, situated on the east side of the campus that lies to the south of the Main Buildings. All students who have paid a library fee to the Bursar of the University are

entitled to the privileges of the Library. Besides Reading Rooms the building contains Departmental Studies, which may be used as study-rooms by honour students in the various branches and in which the Professors hold seminary courses. The Library is opened at 8.45 every morning and remains open until 5.15 in the afternoon (6 p.m. during the second term). Books may not be taken out of the building during the daytime, but are lent for the night shortly before the hour of closing, to be returned the following morning before 10 o'clock. Books not in general demand, may on special application, be borrowed for a longer period. Failure to return a borrowed book at the proper time and other breaches of the regulations are punishable by fine or suspension from the privileges of the Library.

THE PATHOLOGICAL BUILDING.

This building is situated on University Avenue and connected by a covered corridor with the Out-patient Department and so with the rest of the Toronto General Hospital. On the basement, or ground floor, are the Pathological Museum, lecture room and autopsy room as well as students' coat room and lavatories. On the first floor are rooms for the Hospital Pathologist and the routine Hospital pathology and class rooms for pathological histology and bacteriology. On the second floor the Professor of Pathology and Lecturer in Bacteriology have their private laboratories, and there are rooms for the Departmental Library and special classes in Pathology, in addition to a set of laboratories for pathological chemistry for the use of students in the Fourth and Fifth Years. On the third floor are the class rooms for systematic instruction in pathological chemistry and the laboratories for the staff in this Department, including balance, polari-meter, combustion and experimental rooms. Above this in the roof is the accommodation for animals.

Connected with the autopsy room is a cold storage plant with accommodation for twelve cadavers, and by means of a brine circulation, refrigerators in the staff laboratories on the first, second and third floors are kept cold. For many of the laboratories too there is a compressed air service.

The lecture room has seats for about 150 students and is connected with a room for preparing experimental demonstrations.

The museum is planned especially for the instruction of students: a small catalogue room and a preparation room are connected with it.

The class rooms are divided into small units and are exceptionally well lighted.

Lockers are provided for more than 300 students in the laboratories for pathological chemistry so that every student working in the Hospital may have his own place and apparatus.

The building is of fire-proof construction throughout.

ROYAL ONTARIO MUSEUM.

Archaeology, Geology, Mineralogy, Palaeontology, Zoology.

Students of the University in all departments are recommended to avail themselves of the privileges of the Museum, which, although under separate control, is intimately connected with the work of the University.

The Museum is open on all week days from 10 a.m. to 5 p.m. The admission is free to the public on Tuesday, Thursday and Saturday. On other days an admission fee of fifteen cents is charged.

By a resolution of the Board of Trustees all regular students of the University may be admitted free on all days of the week by presenting their card of registration.

TORONTO GENERAL HOSPITAL.

The Hospital has more than seven hundred beds, and during the last year admitted to its wards 11,838 patients.

The Out-door Department, which has been elaborately equipped with especial attention to the requirements of teaching as well as treatment, is designed to receive and care for several hundred patients each day, if necessity demands. Last year 46,964 out-patients were treated.

The Hospital is for the treatment of acute medical and surgical diseases, and the members of the staff are, in nearly every instance, drawn from the University Medical Faculty.

The Hospital Block contains ten acres, and the group of buildings includes almost everything necessary to enable a student to acquire a practical knowledge of the profession of Medicine.

On the south-west corner is situated the large Pathological Building, which is also an integral part of the Hospital. In it are found the Pathological, Clinical, Chemico-Pathological and Vaccine Laboratories, as well as the Autopsy Room, Museums, etc. The Pathological Building is regarded as one of the most complete in America.

North of the Pathological Unit is found the Out-Patients' Department already referred to; then follows the Emergency Hospital, fully equipped with every modern device necessary for the immediate care and treatment of emergency patients. In this building arrangements have been made for the teaching and demonstration of practical methods in minor surgery.

The Medical Wing, the Administrative Building and Surgical Wing face College Street. These groups embody every modern requirement in hospital equipment, and special facilities for the student are provided—such as lecture room, lunch room, cloak room, etc.

Twelve Operating Rooms are to be found in the different Surgical sections. South of the Surgical Wing is located the Obstetrical Hospital with eighty beds.

The X-Ray Department is one of the most complete on the continent, and averages more than one hundred patients sent in for examination. Complete courses are given to the students, so that they can qualify themselves in X-ray work. A well equipped Hydro-Therapeutic Department exists in connection with the X-Ray Department.

Clinical Training.

Clinical instruction is given in the various departments of the Hospital on all classes of patients.

I. *Theatre Lectures:*—Clinical Lectures are given on patients brought from the wards to the large theatre, by the professors of clinical medicine and of clinical surgery to the students of the Third, Fourth and Fifth years.

II. *Instruction in the Wards:*—

(*a*) Medicine and Surgery:—A systematic course of bedside instruction is given to a limited class of students. Arrangements are such that each physician and surgeon or his assistant is in daily attendance for the purpose of imparting instruction at the bedside. By this means provision is made for continuous daily work in the ward, and students of the Third, Fourth, and Fifth years are required to avail themselves of it.

(*b*) Gynaecology:—Small classes of students receive instruction in diseases peculiar to women in the wards specially devoted to the treatment of such patients. These classes meet daily. Increased facilities have recently been provided for an out-door Gynaecological clinic.

(*c*) Obstetrics:—In the Obstetrical Hospital, final students are permitted to witness and assist in the conduct of *labours*. Students are also allowed to make engagements with out-patients and to attend them in confinement at their own home. The number of births in this Department last year was 855.

(*d*) Ophthalmology, Otology, Laryngology and Rhinology:—Diseases of the eye, ear, throat and nose are studied in the wards of the Andrew Mercer Infirmary.

III. *Surgical Operations:*—Surgical operations are performed in the various operating theatres every morning, or in cases of emergency at any time during the day or night when required.

IV. *Out-patients' Clinics:*—The recent provision which has been made for the accommodation of out-patients will afford unsurpassed facilities for instruction in the important class of diseases which here pass under observation. Physicians and Surgeons are in attendance daily, and the patients serve to illustrate the instruction. The cases presenting themselves in the special departments of the Hospital devoted to diseases of the eye, ear, etc., are available in the same manner. There also is an out-door clinic in gynaecology.

V. *Pathology:—*

(*a*) Autopsies:—These are performed at stated hours by the Professor or the Demonstrator of Pathology. The examinations are conducted in a systematic way, and instruction on the morbid conditions found is imparted to the students. The bearings of the gross post-mortem appearances on the conditions previously found at the bedside are carefully investigated and, when necessary, arrangements are made for further examination, microscopical and chemical. There were 199 autopsies during the year.

(*b*) The examination and analysis of the various fluids, excreta and pathological products of patients in the wards, are conducted in the University Hospital laboratory. Students are required to keep systematic records of the results obtained by these examinations.

Clinical Clerks and Surgical Dressers.

Clinical clerks and surgical dressers are appointed to act for limited periods. They are required to take complete histories of cases allotted to them, and to receive certificates for the same, as required by the Ontario Medical Council. Post-mortem clerks are appointed, and are required to make complete reports of all autopsies made in the post-mortem room which is situated in the Hospital grounds. Clinical clerks and surgical dressers are also appointed in the departments of gynaecology, ophthalmology and otology.

Every student in the Department of Surgery shall be required to take the history, attend the dressing and keep the record of four cases in the Ward.

If any such cases come to operation he shall attend the same, disinfect himself, don an operating gown and come within the pale of the theatre to render such assistance as may be required of him, and to record the facts of the operation and the result. If any such come to post-mortem examination he shall attend the same, render such assistance as may be required of him and record the findings.

Students in Clinical Medicine shall be required to observe this last regulation respecting attendance at post-mortem examinations.

Resident Assistants in the Hospital.

A number of resident assistants are appointed annually from the graduates in medicine of the University, and hold their positions for two years.

They will have full opportunities for acquiring experience in the general and special wards of the Hospital, and during the session they will have charge under the physicians and surgeons in the general wards.

HOSPITAL FOR SICK CHILDREN.

This large Hospital, with 250 beds, is entirely devoted to diseases in children, there having been 5,048 cases treated during the last year. In the Out-patient Department, 39,583 patients were attended. The old building

has been remodelled and a large new wing has been built on the west side of the present building. These alterations and additions include new operating theatres, out-patient department, pathological laboratories and wards for infectious cases. In the clinics, cases exemplifying the various diseases in infancy and childhood will be exhibited. Abundant opportunities for a personal examination of all cases are afforded.

Resident assistants are appointed annually from the graduates in medicine of the University, and hold their position for the year. The opportunity thus afforded for obtaining a practical knowledge of this very important department of medical practice is unsurpassed.

ST. MICHAEL'S HOSPITAL.

This institution is conducted as a General Hospital, where medical, surgical and obstetrical cases are admitted. The number of patients admitted last year was 5,095 while 16,760 cases were treated in the out-patient department. There were 402 births in the Obstetrical Department. The accommodation has been enlarged by the addition of a new wing, so that there are now 400 beds. An operating theatre has been provided constructed with all the necessary modern equipment for the practice of antiseptic surgery.

Clinical instruction is given in this Hospital by those members of the staff who are also on the teaching staff of the University of Toronto. Opportunity is also provided for the study of Pathology. Post-mortem examinations are conducted systematically so that students may avail themselves of the material in this department. Clinical clerks and surgical dressers are appointed from the students in attendance at the Hospital.

Resident assistants are appointed annually from the graduates in Medicine of the University of Toronto.

TORONTO WESTERN HOSPITAL.

This is a modern institution affording excellent opportunities for clinical study. During the past year 4,700 patients were admitted, making a daily average of 197. There is an out-door service where dental, tubercular, surgical, medical, gynaecological and special clinics are held; the number of patients treated in the Out-patient Department last year was 10,173.

An X-Ray Department, a clinical laboratory and a morgue are aids to the students in the pursuit of their studies.

Two large operating theatres are provided and the operations performed last year numbered 2,449. There is also an Obstetrical Department.

There are four public wards specially adapted for clinical teaching each containing thirty beds; two of these wards are devoted to medical and two to surgical cases.

Resident assistants are appointed from the graduates and undergraduates in Medicine of the University of Toronto.

GENERAL INFORMATION FOR STUDENTS.

PHYSICAL TRAINING.

By order of the Board of Governors each male student proceeding to a degree must take Physical Training in the First and Second Years of his attendance. He must first undergo a medical examination by the Physical Director of the University to determine the character of his training.

DISCIPLINE.

The Council of University College and the governing bodies of the federated universities and colleges, respectively, have disciplinary jurisdiction over and entire responsibility for the conduct of their students in respect of all matters arising or occurring in or upon their respective college buildings and grounds, including residences.

The councils of such of the faculties as have assigned for their separate use any building or buildings and grounds, including residences, have disciplinary jurisdiction over and entire responsibility for the conduct of all students in their respective faculties in respect of all matters arising or occurring in or upon such building or buildings and grounds.

In all such cases, and, save as aforesaid, as respects all students to whatsoever college or faculty they may belong, disciplinary jurisdiction is vested in the Caput, but the Caput may delegate its authority in any particular case or by any general regulation to the council or other governing body of the university or college or faculty to which the student belongs.

If there be any question as to the proper body to exercise jurisdiction in any matter of discipline which may arise, the same shall be determined by the Caput, whose decision shall be final.

Disciplinary jurisdiction includes the power to impose fines.

REGULATIONS RELATING TO STUDENTS.

1. No student will be registered in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Faculty Council or Caput to be prejudicial to the interests of the University. Registration in any year does not entitle a student to registration in a subsequent year.

2. Students are required to attend the course of instruction and the examinations in all subjects prescribed for students of their respective standing, and no student will be permitted to remain in the University who persistently neglects academic work.

3. All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

4. A student who is under suspension, or who has been expelled from a College or the University, will not be admitted to the University buildings or grounds.

5. The constitution of every University society or association of students and all amendments to any such constitution must be submitted for approval to the Caput. All programmes of such societies or associations must, before publication, receive the sanction of the Caput. Permission to invite any person not a member of the Faculty of the University to preside at or address a meeting of any society or association must be similarly obtained. Societies and associations are required to confine themselves to the objects laid down in their constitution.

6. The name of the University is not to be used in connection with a publication of any kind without permission of the Caput.

THE UNIVERSITY OF TORONTO MEDICAL SOCIETY.

This Society consists of the graduates and undergraduates enrolled in the Faculty of Medicine of the University of Toronto. It is under the patronage of the members of the Faculty of Medicine and its object is to deal with all matters pertaining to the general interest and welfare of the students, especially:—

(*a*) To encourage interest in general medical science and literature, and in pursuit of medical studies.

(*b*) To provide a supply of daily newspapers, periodicals, magazines and music for the reading rooms; also telephones for the convenience of students.

(*c*) To be a means of communication between the Student body and the Faculty or others, when such communication is desirable.

(*d*) To provide a series of entertainments for students at intervals during the Session.

(*e*) Each student will be required to pay the annual fee of two dollars to the Treasurer of the Society, to be divided as follows:—

Medical Society Fee	$1.00
Athletic Fee	.25
Class Fee	.75

UNIVERSITY OF TORONTO YOUNG MEN'S CHRISTIAN ASSOCIATION.

The aim of this organization is to be of service to the undergraduates. At the commencement of the fall term it conducts a general information bureau where lists of inspected boarding houses are kept. Handbooks containing information that is of interest and importance to every student are presented to the men by the Association. The dose tables, prescriptions and chemical tests which are included in the Medical edition of this handbook make it of permanent value to every student in Medicine. The Association also endeavours to assist the men of the first year to become acquainted with each other and with men outside their own class by arranging a reception for them early in the year. For those students who find it difficult to meet all the expenses of a college course an employment bureau was opened last year, by means of which employment was provided for the spare hours of a few deserving students.

On Sunday mornings, for a greater part of the academic year, the Colleges' Sermon Series is conducted in the University Convocation Hall. The preachers at these services are among the strongest speakers to students in Canada and the United States.

The Bible Study Department of the Association has proven most interesting and helpful to the students. The method adopted for this study is the group system which means that the men who are following the work meet in groups of from six to eight in number at a time and place convenient to the members of the individual group. Each group is led—not taught—by a fellow student. As a result of the freedom of discussion which this method assures, and of the systematic nature of the study, great interest is aroused in the things which really count in life.

Mission Study classes are conducted on the same principle and afford an excellent opportunity for acquiring an acquaintance with the great world problems of our age.

ALPHA OMEGA ALPHA HONOUR MEDICAL SOCIETY.

A chapter of the Alpha Omega Alpha has been in existence in the University of Toronto since 1906. This society, which has chapters in all the principal Medical Schools of Canada and the United States, is a student organization founded for the furtherance of Medical Research. Entrance to it is dependent entirely upon standing at examinations. Its activities consist in a series of bi-weekly meetings held during the winter session, for which papers are prepared and read by the student members.

REGULATIONS FOR LICENCE TO PRACTISE.

For official information of all matters relative to the regulations for licence to practise in the various Provinces in the Dominion, students should communicate with the Registrar. The following is a list of the names and addresses of the Registrars of the Medical Councils:

For official information regarding the Medical Council of Canada address: Dr. R. W. Powell, 180 Cooper Street, Ottawa, Canada.

Ontario—Dr. H. W. Aikins, 170 University Ave., Toronto.

Quebec—Dr. J. Gauvreau, 30 St. James Street, Montreal, and Dr. C. R. Paquin, Quebec, P.Q.

New Brunswick—Dr. John S. Bentley, St. John.

Nova Scotia—Dr. W. H. Hattie, Halifax, N.S.

Prince Edward Island—Dr. S. R. Jenkins, Charlottetown.

Newfoundland—Dr. H. Rendell, St. John's, Newfoundland.

Manitoba—Dr. J. S. Gray, 358 Hargrave Street, Winnipeg, or W. J. Spence, Registrar University of Manitoba, Winnipeg.

Alberta—Dr. G. Macdonald, Calgary, Alta.

Saskatchewan—Dr. G. A. Charlton, Regina.

British Columbia—Dr. A. P. Proctor, Victoria, B.C.

The following concession has been granted by the College of Physicians and Surgeons of British Columbia:—

"That this Council would deputize the Faculty of the various Universities to act as an examining board, but that candidates before being allowed to proceed with the examination must be able to present to the Registrar of such University a receipt from the Registrar of the Council of the College of Physicians and Surgeons of British Columbia showing they had paid their examination fee of one hundred dollars ($100.00).

THE FACULTY OF MEDICINE AND THE WAR.

THE UNIVERSITY OF TORONTO C.O.T.C.

The formation of the University of Toronto Contingent of the Canadian Officers' Training Corps was authorized on October 15th, 1914. Lieut.-Col. W. R. Lang, C.E., Professor of Chemistry in the University, was appointed Commanding Officer, with Major C. S. McVicar Second in Command. Twelve companies were organized, two (F. and G.) being assigned to the Faculty of Medicine, under Captains E. S. Ryerson and W. F. McPhedran. Through both terms of the session 1914-1915, drill and instruction by lectures were given to each company on three afternoons of the week. Before the close of the session many of the members had left to join various active service units, notably the 25th and 26th batteries, C.F.A., No. 2 Casualty Clearing Station, No. 5 Field Ambulance, and No. 4 General Hospital (University of Toronto). With the last named went Major C. S. McVicar, Captain E. S. Ryerson, Lieutenants R. G. Armour, D. A. L. Graham and J. G. Gallie. Captain L. Gilchrist succeeded Captain Ryerson in the command of F Company, and remained in charge till the summer of 1916, when he left to take an appointment in the Ontario Military Hospital at Orpington.

During the summer of 1915 many members of the Corps went on active service. In October of that year the Corps was again about 1,500 strong, but in the course of the session 1915-1916 its numbers rapidly diminished owing to the continuous enlistments for overseas service.

In October, 1916, F and G Companies were combined and took training under Lieut. C. A. Rae, who in March, 1917, received an appointment in the C.A.M.C. and proceeded overseas.

To the students of the Faculty of Medicine the C.O.T.C. has been of service in two ways. For those who have joined the combatant services it has provided the same course of infantry training as for the students of other faculties. For those who have joined the medical units it has provided the preliminary training and knowledge of organization which are required in all branches of the service. In addition, special courses in A.M.C. work have been carried out under the direction of the A.D.M.S. of this military district.

Those who organized the C.O.T.C. have the satisfaction of knowing that the Medical graduates from 1915-1918 and the undergraduates of the corresponding period who have gone on Active Service and often won marked distinctions, the majority were formerly members of the Corps. In addition there are the many graduates of previous years, whose names are on the Roll of Service.

No. 4 CANADIAN GENERAL HOSPITAL (UNIVERSITY OF TORONTO).

On the 15th of May, 1915, the University of Toronto sent a General Hospital of 1,040 beds to the Front. The officers, forty-three in number were drawn from the members of the Faculty of Medicine, under the leadership of Colonel J. A. Roberts. This unit was splendidly equipped as University of Toronto graduates and others voluntarily subscribed large sums of money and also sent in useful supplies. No less than six ambulances were donated, as well as several motors of different descriptions.

The interest in this particular hospital has been widespread and it has attracted attention in the United States. The Daughters of the Empire in Cleveland have been most kind and generous in sending supplies and equipment, including a motor ambulance and a truck—and a graduate in Chicago supplied a touring car.

After reaching England the unit was broken up for a time—the physicians and surgeons doing duty in different parts of England and France; the nursing sisters were distributed in the hospitals of England and France, but eventually the majority of the medical staffs were gathered in Shorncliffe, where they took charge of the military hospital.

On October 18th, 1915, the unit left England for the Mediterranean, sailing from Plymouth on board a transport. The sisters were sent on a hospital ship and were thus temporarily separated from the rest of the unit. After a short visit to Malta and Alexandria, the unit proceeded to Salonica where, on November 10th, the Hospital was established under canvas, on a plain four miles from the town.

Throughout the winter the Hospital carried on their work and a great deal was accomplished for the relief of the sick and wounded. On May 25th, 1916, the Hospital was transferred to a new site on a small peninsula forming the eastern boundary of the harbour of Salonica. On the new site wooden huts had been erected; these were of a substantial character and provided excellent accommodation for efficient work. Certain huts were utilized as wards, others were set apart as operating rooms, pathological laboratory, X-ray room and dental hut. Special groups of huts formed the living rooms of the personnel of the unit and others the administrative offices. The wards were furnished with comfortable beds and each bed was provided with an ample canopy of mosquito netting. The Hospital had its own electric light and power plant and was also equipped with a special water supply and sewage system.

The equipment of the Hospital on its new site was complete in every particular. Originally it had accommodation for 1,040 beds but later this was extended to 2,000 beds. During the summer of 1916 an enormous number of patients were treated for diseases peculiar to the climate, in particular malaria and dysentery were rife. A large number of surgical cases also were treated in the surgical wards, under ideal conditions. During the first twelve months of their sojourn in Salonica 17,682 patients were

admitted to the wards. In many ways the experience gained was invaluable to the teachers from the University as it gave them a new point of view and added to their knowledge of the diseases of the East. From June 1916 to November of the same year, no less than 5,188 cases of malaria were observed and treated, and other types of diseases incident to the East. The percentage of deaths was .005, a rate that is very small indeed.

In March, 1917, the Dental Department received great praise. Lt-Col. Gow was called to see the aged King of Serbia, for whom he extracted several teeth and made a couple of dentures. As a result Col. Gow received the decoration "Order of the White Eagle"—fourth class; Capt. Shields who administered the anaesthetic, "Order of Savva"—fifth class; Corporal A. Smith, Privates T. A. Jones and A. W. Jones each received medals of the Crown Prince's Household.

Col. J. A. Roberts returned to England in poor health the latter part of 1916, and was succeeded by Col. W. B. Hendry. Col. Roberts had a brilliant record, and his distinguished services were acknowledged by the King, who gave him the rank of C.B. Col. Hendry, who is immensely popular with all members of the Hospital unit, has proved a worthy successor to Col. Roberts, and has upheld the traditions of the University in every way possible.

After establishing a most flattering reputation in the East, the Hospital was transferred September 1917 to England, and shortly after their arrival they were assigned to Basingstoke, Hants, one of the best of the medical hospitals in England. It was built for a hospital for the Insane and is magnificently equipped with a duplicate "plant" for almost everything in the mechanical line. It provides accommodation for more than two thousand patients.

At the time of the signing of the Armistice the Hospital was actively occupied with its war work and since that date has been kept exceedingly busy owing to the fact that so many Hospital units in France have been demobilized.

LIST OF STAFF OF THE FACULTY OF MEDICINE OF THE UNIVERSITY OF TORONTO ON MILITARY SERVICE.

JOHN ANDREW AMYOT, C.M.G., M.D.,
Professor of Hygiene,
Overseas. Major with No. 4 Canadian General Hospital; Transferred—Lt.-Col., Sanitary Advisor to the Canadian Forces in England. Thereafter at Headquarters 2nd Army, B.E.F., now Consultant in Sanitation to D.M.S., Canadians.

ROBERT GARDNER ARMOUR, B.A., M.B.,
Assistant in Clinical Medicine,
Overseas. Major with No. 4 Canadian General Hospital, Salonica, Greece. Hospital removed to Basingstoke.
Neurologist, Mil. District No. 10, Winnipeg, Canada.

FREDERICK ALLEN AYLESWORTH, M.D., C.M.,
Assistant in Ophthalmology,
Home Service. Ophthalmic Cases in Military Wards, Toronto General Hospital.

WILLIAM HAROLD TREVORROW BAILLIE, M.A., M.B.,
Lecturer in Comparative Anatomy,
Capt. C.A.M.C.—A.D.M.S. Staff, Bramshott, Hants, England.

HERBERT WILLIAM BAKER, B.A., M.B.,
Assistant in Surgery and Pathology,
Overseas.

GORDON ANDERSON BATES, M.B.,
Assistant in Clinical Medicine,
Home Service. Captain. In charge of Venereal Diseases in M.D. No. 2.

HARRY KENDALL BATES, M.B.,
Demonstrator in Anatomy,
Overseas. Capt., Central Military Hospital, Shorncliffe, Eng. Later—Headquarters Central Group, Can. Forestry Group, B.E.F., France. C.A.M.C. Can. Spec. Hosp., Etchinghill, Kent, Eng.

GEORGE MAITLAND BIGGS, M.B.,
Assistant in Oto-laryngology,
Home Service. Captain. Military Ward, Toronto General Hospital.

DAVID HARVEY BODDINGTON, M.B.,
Assistant in Clinical Laboratory,
Overseas. Major Siberian Expeditionary Force.

EDMUND BOYD, B.A, M.B.,
Assistant in Oto-laryngology,
Overseas. Capt. C.A.M.C.

GEORGE FLORIAN BOYER, M.D.,
Assistant in Clinical Medicine,
Overseas. Major with No. 4 Canadian General Hospital, Salonica.
Transferred—A.D.M.S. Staff, Canadians; later to Granville Canadian Special Hospital, Ramsgate. Physician in charge of Neurology, Buxton Hospital, Buxton, England, and later of Central Military Hospital, Toronto.

THOMAS GREGOR BRODIE, M.D., F.R.S.,
Professor of Physiology,
Capt. No. 4 Canadian General Hospital (On special duty.) (Died, August 20th, 1916.)

HERBERT ALEXANDER BRUCE, M.D., F.R.C.S., Eng.,
Associate Professor of Clinical Surgery,
Col. Consulting Surgeon to the British Forces in France under the War Office.

IRVING HEWARD CAMERON, M.B., LL.D., F.R.C.S.,
Professor of Surgery and Clinical Surgery,
Overseas. Col., Head of Surgical Staff, Ontario Base Hospital, Orpington, Kent, England.
Transferred—Consultant (Surgical) on Staff, D.G.M.S., Canada. Later—President Consultant Board, D.G.M.S. Branch, Canada.

JOHN GEORGE ALEXANDER CAMPBELL, B.A., M.B.,
Assistant in Pathology,
Overseas. Capt. Sanitary Section, C.A.M.C., attached to No. 5 Canadian Mobile Laboratory, B.E.F., France.

WALTER RUGGLES CAMPBELL, M.A., M.D.,
Demonstrator in Pathological Chemistry,
Overseas. Captain C.A.M.C.

ALFRED HANS CAULFEILD, M.B.,
Special Assistant in Research in Medicine,
Overseas. Captain. Detailed for special duty with National Medical Research War Hospital, Croydon, with Prof. Hort.
Later—to Addington.
Transferred—No. 1 Canadian General Hospital, France, then to No. 8 Canadian Field Ambulance.
Now—Detailed to Research on Gas Gangrene in Divisional Laboratory, Toronto.

GRAHAM CHAMBERS, B.A., M.B.,
Associate Professor of Clinical Medicine,
Overseas. Hon. Lt.-Col. with No. 4 Canadian General Hospital,
Transferred—Head of Medical Staff, Ontario Base Hospital, Orpington, Kent, England.
Later—Of Moore Barracks Military Hospital.

FREDERICK ADAM CLELAND, B.A., M.B.,
Assistant in Clinical Surgery,
Overseas. Major. C.A.M.C. Siberian Expeditionary Force.

HERBERT ERNEST CLUTTERBUCK, M.B.,
Assistant in Gynaecology,
Overseas. Lt.-Col. with No. 13 Base Hospital, Boulogne, France.
Transferred—In charge of Surgery, No. 8 Casualty Clearing Hospital, Bailleul. Capt. R.A.M.C. No. 20 G.H., France. R.A.M.C. ½ Officers Div. No. 20 G.H., France.

C. EDMUND COOPER COLE, B.A., M.B.,
Demonstrator in Therapeutics,
Overseas. Capt. M.O. of Princess Patricia Canadian Light Infantry, C.E.F.
Later—Major on Staff of Duchess of Connaught Canadian Red Cross Hospital, Cliveden, Bucks. Later—Lieut.-Col. Bramshott Hospital, Bramshott, Hants, England. Lt.-Col. O.C. Whitby Conval. Hospital—No. 11 British G.H., France.

ALLAN FREETH COVENTRY, B.A.,
Lecturer in Vertebrate Embryology,
Home Service. Capt. District Intelligence Officer, Military District No. 2.
Later—Overseas with 1st Canadian Tank Battalion.

MALCOLM MCLACHLAN CRAWFORD, M.B.,
Demonstrator in Obstetrics,
Overseas. Major. Adjutant with Ontario Base Hospital, Orpington, Kent.
Transferred to D.G.M.S., Office, Canada.

JABEY HENRY ELLIOTT, M.B.,
Associate in Medicine and Clinical Medicine,
Home Service. Consultant in Chest Cases in M.D. No. 2.

ANDREW ALMON FLETCHER, M.B.,
On enlistment, Junior Research Fellow in Medicine,
Overseas. Capt. with No. 4 Canadian General Hospital, Salonica.
Transferred—Office of A.D.M.S., Canadians, London Area; then to Granville Canadian Special Hospital, Ramsgate.
Later—Major M.O. Central Military Hospital, Toronto.

JOHN GERALD FITZGERALD, M.B.,
Associate Professor of Hygiene,
Home Service. Major. Second Sanitary Officer, 2nd Military Division.
Later—Overseas with R.A.M.C. Major O.C. No. 39 Mobile Labty.

John Taylor Fotheringham, C.M.G., B.A., M.B., M.D., C.M.,
Associate Professor of Medicine and Clinical Medicine,
Overseas. Lt.-Col., Assistant Director Medical Services 2nd Division, Canadian Expeditionary Forces.
Transferred—Surgeon-General, C.E.F., and D.M.S. Invalids, Ottawa. Later—A/D.G.M.S., Canada.

Robert Edward Gaby, B.A., M.D.,
Demonstrator in Anatomy and in Clinical Surgery,
Overseas. Capt. with No. 4 Canadian General Hospital, Salonica.
Transferred—M.O. Toronto General Hospital, Military Wards.

John Gordon Gallie, B.A., M.B.,
Assistant in Obstetrics,
Overseas. Capt. with No. 4 Canadian General Hospital, Salonica.
Transferred—Kitchener General Hospital. (Resigned).

William Edward Gallie, M.B., F.R.C.S., Eng.
Demonstrator in Clinical Surgery,
Overseas. Captain. C.A.M.C., Buxton Hospital, England.

Lachlan Gilchrist, M.A., Ph.D.,
Assistant Professor of Physics,
Overseas. Capt. X-Ray Department, Ontario Military Hospital, Orpington.

Perry Gladstone Goldsmith, M.D.,
Demonstrator in Oto-Laryngology,
Overseas. Lt.-Col. Eye and Ear Hospital, Folkestone, Eng.
Later—Officer in charge, Canadian Convalescent Officers Hospital, Broadstairs, England.
Later—O.C. Officers Convalescent Hospital, Matlock, Derbyshire.

William Goldie, M.B.,
Associate Professor in Clinical Medicine,
Overseas. Capt. with No. 4 Canadian General Hospital, Basingstoke.

Andrew Robertson Gordon, M.B.,
Associate Professor of Clinical Medicine,
Overseas. Hon. Lt.-Col. No. 4 Canadian General Hospital. (Died, December 16th, 1916).

Duncan Archibald Lamont Graham, M.D.,
Lecturer in Bacteriology,
Overseas. Lt.-Col. with No. 4 Canadian General Hospital, Salonica.
Hospital removed to Basingstoke.

Roscoe Reid Graham, M.B.,
Assistant in Clinical Surgery,
Overseas. Capt. with Medical Board, London, England. C.A.M.C. No. 4 Can. G.H., Basingstoke.

CHARLES H. HAIR, M.D., C.M.,
Assistant in Clinical Surgery,
Overseas. Captain. C.A.M.C. Siberian Expeditionary Force.

BEVERLEY HANNAH, M.B.,
Assistant in Clinical Medicine,
Overseas. Capt. C.A.M.C.

FREDERICK CHRISTOPHER HARRISON, B.A., M.B.,
Assistant in Pharmacology,
Home Service. Capt. C.A.M.C., M.O., R.A.F.

WILLIAM BELFRY HENDRY, D.S.O., B.A., M.B.,
Associate in Gynaecology,
Overseas. Lt-Col., Second in Command, No. 4 Canadian General Hospital, Salonica.
Later—Colonel and Officer Commanding No. 4 Canadian General Hospital, Salonica. Hospital removed to Basingstoke, Hants., England.

SAMUEL ROSS DELAP HEWITT, M.B.,
Assistant in Therapeutics,
Overseas. Capt. No. 4 Canadian General Hospital, Salonica.
Transferred—Standing Medical Board, M.D. No. 2, Canada.

VELYIEN EWART HENDERSON, M.A., M.B.,
Associate Professor of Pharmacy and Pharmacology,
Overseas. Major with 198th Battalion, C.E.F.
Later—Capt. No. 14 Canadian Field Hospital, France.

ROBERT HOME, M.B.,
Demonstrator in Anatomy,
Overseas. Capt. with 107th Field Ambulance, R.A.M.C.
(Killed in Action, April 27th, 1917.)

GOLDWIN WILLIAM HOWLAND, B.A., M.B., M.R.C.P., Lond.
Home Service. Capt. Base Hospital, Toronto.
Resigned—August 1918.

ANDREW HUNTER, M.A., B.Sc., M.B., Ch.B., Edin.,
Home Service. Capt. Divisional Laboratory Unit, M.D. No. 2.

CYRIL GRAY IMRIE, M.D.,
Lecturer in Chemical Pathology,
Overseas. Capt. No. 4 Canadian General Hospital, Salonica.
Transferred—Pathologist, Ontario Military Hospital, Orpington, Kent.

FRANCIS BOTELER KENRICK, M.A., Ph.D.,
Associate Professor of Chemistry,
Home Service. Instructor at School of Instruction.

WILLIAM ROBERT LANG, D.Sc., F.I.C.,
Professor of Chemistry and Director of the Chemical Laboratory,
Home Service. Colonel. General Staff Officer in charge of Instruction, M.D. No. 2.
Transferred to Military Division No. 6, Hdqts. East Halifax.

JULIAN DERWENT LOUDON, B.A., M.B., M.R.C.S., L.R.C.P.,
Assistant in Clinical Medicine,
Home Service. Capt. C.A.M.C. Standing Medical Board, M.D. No. 2.

GLADSTONE WILFRED LOUGHEED, M.D.,
Assistant in Pathology,
Overseas. Capt. M.O. of 134th Battalion, C.E.F.
Later—4th Canadian Field Ambulance, B.E.F., France.

OLIVER RAYMOND MABEE, M.D., C.M., McGill.,
Assistant in Clinical Surgery and Pathology,
Overseas. Capt. C.A.M.C.

SAMUEL JOHN NEWTON MAGWOOD, M.B.,
Assistant Demonstrator in Obstetrics,
Overseas. Major.
Transferred—No. 2 Canadian Casualty Clearing Station.
Later—On Staff, D.G.M.S., Ottawa. Now attached—Office A.D.M.S., M.D. No. 2.

WILLIAM JOHN OGILVIE MALLOCH, B.A., M.B., F.R.C.S.,
Associate in Clinical Surgery,
Overseas. Lieut.-Colonel. No. 4 Canadian General Hospital, Salonica. Hospital removed to Basingstoke.
(Died February 18th, 1919.)

FREDERICK WILLIAM MARLOW, M.D., C.M., F.R.C.S.,
Associate Professor of Gynaecology,
Home Service. Lt.-Col. 2nd Division, A.D.M.S.
(Resigned).

PERCIVAL KEITH MENZIES, B.A., M.B.,
Assistant in Clinical Surgery,
Overseas. Major. No. 2 General Hospital, Le Treport, France.
Transferred—Major, Bramshott Military Hospital, England.
Later—Buxton Hospital, Buxton, England.

ANDREW SAMUEL MOORHEAD, M.B., F.R.C.S., England.
Assistant in Clinical Surgery,
Lieut. R.A.M.C.

JOHN ALEXANDER MCCOLLUM, M.B.,
Assistant in Clinical Surgery,
Overseas. Capt. Granville Canadian Special Hospital, Ramsgate. Now at Buxton.

DONALD MCGILLIVRAY, M.B.,
Associate in Clinical Medicine,
Overseas. Major. No. 4 Canadian General Hospital, Salonica.
Later—Lt.-Col., in charge of Medical side of No. 4 Canadian General Hospital, Salonica.
Consultant, D.G.M.S. Branch, Canada.
(Resigned).

WILLIAM GRAHAM MACKECHNIE, M.D., C.M.,
Assistant in Oto-laryngology,
Home Service. Capt. C.A.M.C., M.O., R.A.F.

JOHN JOSEPH MACKENZIE, B.A., M.B.,
Professor of Pathology and Bacteriology and Curator of the Pathological Museum and Laboratories,
Overseas Capt. No. 4 Canadian General Hospital, Salonica. Hospital removed to Basingstoke. (Resigned).

ALEXANDER JOHN MACKENZIE, B.A., M.B., LL.B.,
Demonstrator in Pathology and in Clinical Medicine,
Overseas. Major. Moore Hospital, Shorncliffe, England.
Later—Lt.-Col., in charge of Medicine, Moore Barracks Hospital.
Later—Col. i/c of Medical Department, Granville Canadian Specialists Hospital, Buxton, England.
Now—Officer Commanding, Camp Hospital, Halifax.

PATRICK WALTER HUGHES MCKEOWN, B.A., M.B.,
Associate Professor of Clinical Surgery,
Overseas. Hon. Lt.-Col. No. 4 Canadian General Hospital, Salonica.
Transferred—President of the Standing Medical Board Shorncliffe, England.
Col. Kitchener Army Hosp., Brighton, England.

JOHN HARRIS MCPHEDRAN, M.D.,
Demonstrator in Anatomy and in Clinical Medicine,
Overseas. Major. No. 4 Canadian General Hospital, Salonica. Ontario Military Hospital, Orpington, Kent.

HENRY ALLEN MCTAGGART, M.A., Tor., B.A., Cantab.,
Demonstrator in Physics,
Capt. In charge of X-Ray Department, No. 4 Canadian General Hospital, Salonica.
Hospital removed to Basingstoke.

CHARLES STANLEY MCVICAR, M.B.,
Demonstrator in Clinical Medicine,
Overseas. Major. No. 4 Canadian General Hospital, Salonica.
Transferred—Lt.-Col., Board of Pension Commissioners for Canada.
Later—In charge of Medicine, Orpington, England; then Consultant in Medicine, M.D. No. 2.
Now—Officer Commanding Dominion Orthopaedic Hospital, Toronto.

BREFNEY ROLPH O'REILLY, O.B.E., M.D., C.M.,
Demonstrator in Clinical Medicine,
Sr. M.O. Royal Air Force, M.D. No. 2.

FRANK STEWART PARK, B.A., M.B.,
Assistant in Clinical Medicine,
Overseas. Capt. M.O. of 4th Canadian Mounted Rifles, C.E.F. (Prisoner of war at Gutensloh). Repatriated 1918.
Later—School of Orthopædic Surgery and Physio-therapy, Toronto.

CHARLES BEMISTER PARKER, B.A., M.B.,
Assistant in Clinical Surgery,
Overseas. Capt. C.A.M.C., M.O., R.A.F.

HAROLD CAMPBELL PARSONS, B.A., M.D., C.M., M.R.C.P.,
Associate in Clinical Medicine,
Overseas. Lt.-Col. No. 4 Canadian General Hospital, Salonica.
Hospital removed to Basingstoke.
Consultant D.G.M.S. Office, Canada.

ROBIN PEARSE, F.R.C.S., L.R.C.P.,
Assistant in Clinical Surgery,
Overseas. Capt. No. 4 Canadian General Hospital, Salonica.
Transferred—Office of A.D.M.S., London Area.

GEORGE ROWE PHILP, M.B.,
Demonstrator in Anatomy,
Overseas. Capt. No. 2 Canadian General Hospital, Le Treport, Major. Field Ambulance, C.A.M.C., B.E.F.
Later—Lt.-Col., O.C. No. 8 Canadian Field Ambulance, B.E.F., France. On duty in Canada, A.D.M.S., Petawawa Camp.
Transferred—Board of Pension Commissioners for Canada.

ALEXANDER PRIMROSE, C.B., M.B., C.M.,
Professor of Clinical Surgery,
Overseas. Hon. Lt.-Col. No. 4 Canadian General Hospital, Salonica.
Transferred—Colonel. Consulting Surgeon, Staff, D.M.S., Canadians, London.
Later—Returned to Canada. Consultant in Surgery, M.D. No. 2.

GEORGE EARLE RICHARDS, M.B.,
Assistant in Clinical Medicine,
Overseas. Capt. R.A.M.C.
Later—In charge of X-Ray work, M.D. No. 2.

THOMAS BEDFORD RICHARDSON, M.D., C.M., F.R.C.S.,
Associate in Clinical Surgery,
Home Service. Lt-Col. Medical Officer in charge of Mobilization Centre, Sudbury, Ont.
Transferred—Board of Pension Commissioners for Canada.

ERNEST FULTON RISDON, D.D.S., M.B.,
Demonstrator in Anatomy for Dental Students,
Overseas. Capt. C.A.M.C. Sidcup Hospital, England.

JAMES ALEXANDER ROBERTS, C.B., M.B., L.R.C.P., F.R.C.S.,
Demonstrator in Clinical Surgery,
Overseas. Colonel. O.C. No. 4 Canadian General Hospital, Salonica. Transferred to O.C., Taplow.
Later—Officer Commanding Canadian Military Hospital, Basingstoke, England; now D.D.M.S., London Area.

DAVID EDWIN ROBERTSON, M.B.,
Demonstrator in Pathology and Assistant Curator of the Pathological Museum,
Assistant in Clinical Surgery,
Overseas. Major. No. 1 Field Ambulance, C.E.F., First Div.
Orthopædic Surgeon, Dominion Orthopædic Hospital, Toronto.

LAWRENCE BRUCE ROBERTSON, B.A., M.B.,
Assistant in Pathology and in Clinical Surgery,
Overseas. Major. No. 2 Casualty Clearing Station, France.
Orthopædic Surgeon, Davisville Military Hospital, Toronto.

ALBERT HILL ROLPH, M.B.,
Overseas. Capt. C.A.M.C.
Transferred—I/c X-Ray Department, 7th Canadian Stationary Hospital, C.A.M.C., France.

GILBERT ROYCE, B.A., M.B.,
Demonstrator in Oto-Laryngology,
Overseas. Capt. No. 4 Canadian General Hospital, Salonica.
Hospital removed to Basingstoke.
Later—Lt.-Col. O.C. Canadian Convalescent Hosp., North Bromley, Kent.
Consultant in Oto-laryngology, M.D. No. 2.

ROBERT DAWSON RUDOLF, C.O.B.E., M.D., C.M., F.R.C.P.,
Professor of Therapeutics,
Overseas. Lt.-Col. No. 2 Canadian General Hospital, Le Treport.
Transferred—Colonel, Consultant in Medicine, Staff, D.M.S. Canadians, London.

EDWARD STANLEY RYERSON, M.D., C.M.,
Associate in Clinical Surgery,
Overseas. Major. No. 4 Canadian General Hospital, Salonica,
Transferred. Lt.-Col. A.D.M.S., M.D. No. 2, Toronto, Canada.
(Resigned).

WALLACE ARTHUR SCOTT, B.A., M.B., F.R.C.S.,
Associate in Clinical Surgery,
Demonstrator in Anatomy,
Overseas. Lt.-Col. Moore Barracks Hospital, Shorncliffe, England.
Later—Colonel, Officer Commanding Moore Barracks Hospital.

WILLIAM ALBERT SCOTT, B.A. (McMaster), M.B.,
Assistant Demonstrator in Obstetrics and Gynaecology,
Overseas. Capt. No. 4 Canadian General Hospital, Basingstoke. Resboro Barracks, Shorncliffe.

NOBLE CARMAN SHARPE, B.A., M.B.,
On enlistment, Junior Research Fellow in Medicine,
Overseas. Major. No. 4 Canadian General Hospital, Salonica.
Transferred—Office A.D M.S., Canadians, London.

NORMAN STRACHAN SHENSTONE, M.D.,
Demonstrator in Clinical Surgery,
Overseas. Capt. Ontario Base Hospital, Orpington, Kent.
Transferred—M.O. Toronto General Hospital, Military Wards.

HARRY JAMES SHIELDS, B.A., M.B.,
Assistant in Pathology,
Overseas. Capt. No. 4 Canadian General Hospital, Salonica.
Hospital removed to Basingstoke.

CHARLES BUCKINGHAM SHUTTLEWORTH, M.D., C.M., F.R.C.S., England.
Associate in Surgery and Clinical Surgery,
Home Service. Major. Base Hospital, Toronto.
Later—President Standing Medical Board, M.D. No. 2.

JAMES STARR SIMPSON, M.D., C.M. (McGill), M.R.C.S., Eng., L.R.C.P., Lond.
Assistant in Anatomy and Clinical Surgery,
Overseas. Capt. R.A.M.C.

DAVID KING SMITH, M.B.,
Demonstrator in Clinical Medicine,
Overseas. Major. No. 4 Canadian General Hospital, Salonica.
Transferred. Lt.-Col. Specialist, Diseases of Skin, Staff of Moore Barracks Hospital, Shorncliffe, England.
Later—O.C. Davisville Military Hospital, Toronto.

CLARENCE LESLIE STARR, M.B.,
Associate Professor of Clinical Surgery,
Overseas. Lt.-Col. Chief Surgeon Granville Canadian Special Hospital, Ramsgate.
Transferred—Consultant, D.G.M.S. Branch.

FREDERIC NEWTON GISBORNE STARR, M.B.,
Associate Professor of Clinical Surgery,
Overseas. Major. R.A.M.C.

GEORGE STEWART STRATHY, M.D., C.M.,
Demonstrator in Clinical Medicine,
Overseas. Lt.-Col. No. 2 Casualty Clearing Station, France.
In charge of medicine, No. 14 Canadian General Hospital, Eastbourne, England.
M.O. 44th Bn.

WILLIAM BROWN THISTLE, M.D.,
Associate Professor of Clinical Medicine,
Home Service. Major, Base Hospital, Toronto.

GEORGE EWART WILSON, M.B., F.R.C.S.,
Demonstrator in Anatomy and in Clinical Surgery,
Overseas. Major. No. 4 Canadian General Hospital, Salonica.
Surgeon. Military Wards, Toronto General Hospital.

BENJAMIN PHILP WATSON, M.D., Ch.B., F.R.C.S.,
Professor of Obstetrics and Gynaecology,
Overseas. Capt. with No. 4 Canadian General Hospital, Salonica. (Resigned).

DAVID JAMES GIBB WISHART, B.A., M.D., C.M. (McGill),
Professor of Oto-laryngology,
Home Service. Consultant in Oto-laryngology, M.D. No. 2.

OSWALD CHARLES JOSEPH WITHROW, M.B.,
Assistant in Biology,
Overseas. Capt. Granville Canadian Special Hospital, Ramsgate.
Transferred—No 1 Canadian Casualty Clearing Station, France. (Resigned).

HAROLD WILLIAM WOOKEY, M.B.,
On enlistment, Assistant in Physiology.
Overseas. Major with No. 4 Canadian General Hospital, Salonica.
Hospital removed to Basingstoke.

WALTER WALKER WRIGHT, M.B.,
Assistant in Ophthalmology,
Overseas. Capt. with Westcliffe Hospital, Folkestone.
Transferred—No. 11 Canadian Field Ambulance, France.
(Resigned.)

FACULTY OF MEDICINE, UNIVERSITY OF TORONTO.
LIST OF MEN ON ACTIVE SERVICE.

Undergraduates, also Graduates who were in College when war was declared and who went Overseas when Course was completed.

§Adams, J. H. F.
Allison, J. O.
§Anderson, J. O.
*Andrew, O. F.
§§Archibald, C. H.
§Armstrong, A. G.
§Armstrong, H. G.
*Armstrong, G. W.
§Atwell, W. C.
Auden, K. F.

§Barnes, W. B.
§§Barry, J. E.
§Bartlett, R. D.
§Bastow, D. C.
§Battley, J. C. S.
Beaton, C.
§Bell, G. L.
§Berry, E. G.
§§Bethune, H. N.
§Bicknell, N. J.
Binning, G. G. T.
*Birrell, R. G.
§§Blayney, Y.
§Blott, R. D.
§Bromley, A. J.
*Brown, E. W.
§§Broughton, E. A.
Buckley, H. R.

§Cameron, G. C.
§Campbell, D. M.
§Carlisle, A. M.
§§Carlisle, V.
§Carrie, D. S.
§Carruthers, W. L.
§Carson, J. E.
§Carson, R. A.
*Carter, J. J.
*Case, G. E.
§Charteris, W. F.
Chester, J. F. V.
Clark, H. G.
§Clendenan, D. G.
*Clysdale, E. S.
§Coliton, J. H.
§§Connell, W. C.
§Cosgrave, K. W.
Coulter, D. J.
Coutts, W. G.
§Crawford, J. S.
Crawford, S. H.
§Crehan, W. H.
§Cromarty, R. P.
Crow, G. W.
§Crowley, L. J.
§Cruikshank, H. C.
§Cryderman, W. J.

§Dafoe, W. A
§Dalton, R. E.
*Danard, B. P.
§Danby, S. L. E.
*Danis, J. T.
*Dawson, L. E.
§Devitt, F. B.
§Dickson, C. S.
§Dickson, W. B.
§Docherty, J. F.
§Dow, W. W.
§Doyle, R. H.
§Drummond, H. A
Dunn, A. S.
§Duncan, W. S.

§Eadie, G. S.
§Edmonds, W. B.
Edwards, J. C. R.
Elliott, R. J.
§Evelyn, S. J.
Ewart, E. W.

*Farquharson, R. F.
§Feick, T. B.
*Fell, F. D.
§Ferguson, J. S.
§Fielding, E. M. V.
§Fitzpatrick, C. P.
§Forge, F. W.
*Foster, F. H.
§Fraser, G. M.
§§Furey, N. W.

*Gallaugher, L. C.
§Gauld, W. H.
Gear, J. D.

§§George, R.
Gilmer, E. R.
§Gill, D. G.
*Gillrie, R. B.
§Gordon, A. C.
§Gordon, R. I.
§§Graham, S. G.
§Graham, J. A.
§Graham, W. L.
§Gray, W. H.
§Griffin, F. R.

§§Hagerman, A. R.
Hain, G. R.
§Hall, R. C.
§Hamlin, L. E.
§Hare, R. B.
§Harcourt, J. A. A.
§§Hargrave, H. R.
Harris, C. S.
§Harris, C. W.
Hart, H.
§§Harvie, R. M.
§Haskett, F. H.
§Heard, K. M.
*Henry, W. E.
*Hewgill, J. C.
§Hill, C. E.
§§Hill, L. R.
§§Hodgins, W. E.
§Hogarth, W. P.
§Hopkins, H. E.
§§Howell, J. H.
§Huether, A. L.
Husband, A. C.

§§Irvine, H. J.
§Ives, R. E.

§§Jackson, A. B.
§Jewell, R. M.
§§Johnson, F. M.
§Johnson, J. H.
§§Johnston, W. J.
§Johnston, W. E.
Jones, E. M.
§Jones, G. R.
§Jordan, G. A.
§Joyce, R. E.
§Junkin, F. L.

Kean, G. J.
Kemp, M. W.
§Kilgour, A. J.
§Kinsman, J. D.
§Kirkup, N. N.

*Lamont, J. L.
§Lane, W. R.
Lang, H. B.
§Latchford, J. K.
§Laventure, G. A.
*Lee, P. A.
§§Leech, F. W.
§§Lindsay, A. R.
Linton, J. A.
§Little, W. C.
§Little, H. S.
§Lloyd, F. P.
§Locke, W. B.
§Logie, W. D.
§Logan, H. D.
§Logan, F. A.
§Lyons, G. W.

§Mackersie, W. G.
§Marshall, H. S.
*Martin, A. D.
§Malcolmson, A. S.
Matheson, G. M.
§Mickleborough, K. G.
§Millar, M. E.
Miller, H. R.
§Miller, W. H.
§Minns, J. E.
§Mitchell, F. R.
Mitchell, N. H.
*Montgomery, S. R. P.
§Moon, H. R.
Morris, R. H.
§Mulligan, C. V.
§Murray, D. W. G.
§Murray, J. K. P.
§Murray, L. A.

McAllan, N. R.
§McCart, H. W. D.
§McCarter, A. B.
§McClelland, J. C.
§McClinton, W. S.
*McClintock, J. J.
§McClure, W. B.
§McCormack, W. G.
*McCorvie, C. R.
McEachern, J. M.
§§MacDonald, A. E.
*McDonald, J. J. A.
§McFaul, A. M.
§McGillivray, J. E.
§McIntosh, P. D.
§§Mackenzie, A. E.
§§MacKenzie, J. W.
§McKenzie, W. L.
McKeough, W. S.

§McKinnon, N. E.
McLellan, T. G.
McLeod, J. H.
§Macnamara, H. O.
§McNeil, R. R.
§§McNair, A. Y.
§McPherson, R. J.
§MacQueen, M. D.
§McVean, H. C.

§§Nash, H. C.
*Nelson, E. J.
§Nettleton, E.
§Nickle, F. J.
§Nodwell, G. R.
§§Norwich, A. C.

*O'Donnell, B. A. P.
Ogilvie, J. M.
§O'Leary, F. J.
§Orechkin, S. H.
Owen, H. H.

§Palmer, H. I.
§Palmer, W. S.
*Pauley, G. E.
§Pedley, W. H.
Porter, W.
*Phillips, H. S.
§Powell, W. G.
§Pratt, R. S.
§Price, C. K.
§Puffer, D. S.

§Quinn, H. J.

§§Rae, C. A.
§Ramsey, G. H.
Ratz, R. G.
§Rawlings, H. A.
§§Reddick, J. W.
§Reid, J. S.
§Richardson, R. N. C.
*Richardson, W. F.
§Riddell, W. R.
Rivers, R. E.
§Roger, I. B.
Russell, D. C.
§Russell, N. H.
§§Rutherford, W. B.

§§Sarjeant, P. A.
§§Scott, C. V.
§Scott, W. J.
§§Scullard, G.
§§Shannon, P. R.
§§Sharpe, J. H.
§Shier, L. V.
*Shirley, R. K.
§Shunk, E. S. M.
§Sievenpiper, S.
§Sinclair, K. Y.
Singleton, A. C.
Skipper, S. C.
§§Smith, F. R.
§Smith, J. R.
§Smylie, C. H.
*Smylie, R. T.
Somers, J. B.
§Speck, J. T.
Spence, C. A.
*Spratt, W. L.
§§Stanley, J. A.
§Stevenson, G. H.
§Stevenson, H. G.
Stoddart, W. O.
§§Strachan, J. G.
*Streets, C. W.
§Styner, W. B.
§Sullivan, B. C.
§Sutherland, J. L.
Swan, W. D.
*Switzer, J. W.
Symington, J. B.
§§Sykes, G. F.

§Taylor, R. E.
Thomas, C. H.
§Thompson, A. A.
Thompson, I. B.
§Thomson, W. A.
Travers, J. T.
§Truscott, R. S.
§Turnbull, A.

§Urquhart, G. T.

§Verity, L. E.

§Warner, W. P.
Watson, G. F.
*Watson, G. H.
Webster, D. B.
§§Wells, C. A.
Wickham, F. E.
§Wigle, D. S.
§Wilkinson, F. W.
§Wilson, D. G.
Wilson, F. H.
§§Wilson, M. J.
§Wilson, W.
§Wilson, D. B.
§Wilson, D. G.
§Woods, W. E.

Woodward, R. C.
§Wrong, H. A.
Wright, F. W.
*Zarnke, E. E.
Zumstein, G. T.
§Zwick, F. F.

§Ordered home by the Imperial War Office to complete their course.
§§Completed Course in Medicine and returned to Service.
*Enlisted for overseas service, but did not go overseas.

CLASS 1915.

Allison, G.
Armour, R. S.

Baillie, W. H. T.
Ball, S. S.
Barnett, J. D. H. S.
Black, H.

Carpenter, T. A.
Carr, L. A.
Cates, H. A.
Chassels, J.
Clement, F. W.
Coatsworth, R. C.
Cosbie, W. G.
Courtenay, H. D.
Crews, T. H.
Crompton, C. R. B.
Cunningham, J. G.

Dale, G. M.

Evans, W. L.

Fallis, L. C.
Ferrier, G. J.
Fraser, D. T.

Gillrie, F. R.
Gorman, M. E.
Graham, P. V.

Hamilton, H. P.
Hanley, J. B.
Harris, R. I.
Helliwell, M. R.
Hodge, W. R.
Howitt, J. R.

Jeffrey, E. S.

Kirkham, F. R.

Lamont, G. A.
Letts, F. L.
Ley, A. G.

Marlow, F. C.
Martin, H. C.
Moffat, A. B.
Moon, A. A.

McGanity, A. J.
McLarty, G. A.
McVicker, E. H.

O'Sullivan, P. M.
O'Gorman, V. K.

Paul, R.

Riddell, A. R.
Ross, J. W.
Routley, T. C.

Simpson, T. J.
Smith, H. R.
Stark, W. B.
Stirrett, E. Z.
Stock, V. F.
Storey, V. H.
Storms, T. H. D.
Sutherland, F. H.

Van Wyck, H. B.

Walker, S. A.
Walsh, S. Y.
Wilson, C. E.
Wishart, D. E. S.

CLASS 1916.

Armstrong, G. W.

Ballantyne, T. W.
Barry, J. E.
Blakely, A. M.

Brown, P. B.

Cameron, G. M.
Clarke, E. K.
Connell, W. C.

CLASS 1916—*Continued.*

Corcoran, D.
Curry, P. W. M.

Dales, L. W.
Dickson, J. A.
Dixon, H. A.

Fenwick, C. P.
Foote, W. S.

Gillies, A. E.
Givens, W. C.
Graham, S. G.

Hessian, H. A.
Hetherington, H. B.
Hill, L. R.
Hodgins, W. E.

Jackson, A. B.
Janes, R. M.
Jones, W. E.

Knox, A. W.

Lindsay, A. R.
Little, N. H.

Martin, W. E.

MacCallum, A. J.
McCullough, J. C.
MacDonald, A. E.
MacDonald, A. R.
McDonald, J. L.
McLean, W. J.
McNair, A. Y.
McPherson, E. E.

Naylor, A. H.
Norwich, A. C.

Robson, R. B.
Rehill, J. R.
Rutherford, W. B.

Sarjeant, P. A.
Scullard, G.
Sharpe, J. H.
Stanley, J. A.
Stobie, G. H.

Tisdall, F. F.

Willoughby, C. J. M.
Wilson, F. B. G.
Wilson, M. J.

Young, H. G.

SPECIAL WAR SESSION, DECEMBER, 1916.

Adams, J. F.

Banting, F. G.
Barraclough, W. W.
Bethune, H. N.
Bleakley, T. W.
Boone, F. H.
Boyce, A. J.
Broughton, E. A.
Brown, W. E.

Cornell, B. S.

Davis, D. I.
Dobbin, G. M.
Douglas, J. S.

Elkerton, F. J.
Elliot, H. A.

Farquharson, C.
Findlay, D. G.
Finlayson, D. R.
Frain, C. E.

George, R.
Gilchrist, J. A.
Gimby, J. E.
Graham, M. G.
Grisdale, A.

Hagerman, A. R.
Hardstaff, R. J.
Henderson, W. I.
Hipwell, F. W. W.
Hutchinson, E. D.

Jamieson, W. G.
Jeffrey, A. M.
Jeffs, G. D.
Johnson, F. M.
Johnston, W. J.

Mathers, J. A.
Mills, C. V.
Mitchell, H. A.
Mitchell, I. N.
Montgomery, A.
Moody, A. J.

McAllister, H. C.
McClelland, J. C.
Macdonald, J. H.
McDonald, J. M.
Macdougall, C. S.
MacKay, A.
MacKinlay, R.

Peacock, T. W. P.
Parney, F. S.

Scott, G. R.
Sparks, W. E. L.

Tew, W. P.
Thomas, N. O.
Thompson, C. E.

Veitch, H. D.

White, T. E.

CLASS 1917.

Blayney, Y.

Crawford, J. S.

Furey, N. W.

Hargrave, H. R.
Howell, J. H.

Irvine, H. J.

Leech, F. W.

Miller, C. O.
Mitchell, W. T. B.

Mackenzie, A. E.

MacKenzie, J. W.
MacTavish, C. R.

Nash, H. C.

Rae, C. A.
Rawlings, H. A.
Reddick, J. W.

Scott, C. V.
Shannon, P. R.
Smith, F. R.
Sykes, G. F.

Tate, E. C.

Wells, C. A.

ROLL OF HONOUR.

Killed in Action or Died of Wounds.

John Oliver Allison, Medicine 1919.
Lieutenant, Signalling Officer, 162nd Battalion.
Killed in action, May 21st, 1918.

Robert Stanley Armour, M.B. 1915.
Major, R.A.M.C.
Died of pneumonia, East Africa, December 1st, 1918.

David Benjamin Bentley, M.D., C.M. 1891.
Major, C.A.M.C., Field Ambulance.
Died, April 1917.

Richard Henry Bonnycastle, M.B. 1905.
Major, C.A.M.C.
Died, October 7th, 1917.

George Herbert Bowlby, M.D., C.M. 1888.
Captain, C.A.M.C.
Accidentally killed, November 10th, 1916.

Adam Peden Chalmers, M.D., C.M. 1892.
Captain, C.A.M.C.
Died at St. Lucia, B.W.I., May 16th, 1917.

Allen Charles Mackenzie Cleghorn, M.D., C.M. 1892.
Captain, R.A.M.C.
Died, March 22nd, 1916.

Douglas Johnstone Coulter, Medicine 1921.
2nd Lieutenant, R.A.F.
Died, December 13th, 1918.

Walter Gordon Coutts, Medicine 1921.
Flight-Lieutenant, Royal Flying Corps.
Killed in an aeroplane accident in England, December 2nd, 1917.

Gordon Willson Crow, Medicine 1919.
Lieutenant in the 31st Battery, C.F.A.
Killed in action at the Somme, September 21st, 1916.

Hubert Anthony Culham, M.B. 1910.
Captain, C.A.M.C.
Killed in action, October 4th, 1918.

John Arthur Cullum, M.D., C.M. 1905.
Captain, C.A.M.C.
Died of wounds, November 10th, 1916.

Gustavus Mitchell Davis, M.B. 1901.
Major, C.A.M.C.
Drowned, July 5th, 1918.

George Gordon Duncan, Medicine 1916.
Temporary Captain in the 4th Brigade, 10th Battalion.
Killed in action, May 4th, 1916.

WILLIAM LAURANCE EVANS, M.B. 1915.
Lieutenant in the R.A.M.C., King's Own Liverpool Regiment.
Killed in action, August 11th, 1916.

GEORGE MATTHEW FRETWELL, Medicine 1914.
Private, Canadian Machine Gun Corps.
Killed in action, October 25th, 1918.

JOHN D. GEAR, Medicine 1920.
Surgeon Probationer, R.N.V.R.
Died, November 15th, 1918.

ERNEST RICHARD GILMER, Medicine 1918.
Second Lieutenant in the 1st Royal Irish Fusiliers.
Killed in action, November 28th, 1916.

PAUL ARCHIBALD GILLESPIE, M.B. 1891.
Major, R.A.M.C.
Died at Windburg, South Africa, March 24th, 1916.

GEORGE CLARENCE GLIDDON, graduate of 1914.
Captain in the 10th Battalion.
Died of wounds, May 14th, 1915.

ANDREW ROBERTSON GORDON, M.B. 1890.
Lieutenant-Colonel in the C.A.M.C.
Died, December 16th, 1916.

THOMAS FLECK GRAHAM, M.B. 1914.
Captain, C.A.M.C.
Killed when hospital was bombed, September 20th, 1918.

ARNOLD GRISDALE,
Captain, C.A.M.C.,
Died of Influenza at Niagara Camp, October 11th, 1918.

JAMES HENDERSON, M.D., C.M. 1902.
Captain, R.A.M.C.
Died, July 16th, 1917.

WILLIAM HENDERSON, M.D., C.M. 1898.
Captain, R.A.M.C.
Died, November 1916.

ROBERT HOME, M.B. 1913.
Captain in the 17th Field Ambulance, R.A.M.C.
Killed in action, April 27th, 1917. (Loos.)

RICHARD HORKINS, M.B. 1914.
Captain with the R.A.M.C.
Killed in action at Combles, September 27th, 1916.

FRANCIS CARL HOWARD, Medicine 1918.
Lieutenant in the 75th Canadian Infantry Battalion.
Died while prisoner at Field Hospital 213, Frankfort, Germany, September 9th, 1916, of wounds received in action the same day.

David Edwin Howes, M.D., C.M. 1906.
Captain, C.A.M.C.
Killed in action.

Richard Alfred Ireland, M.B. 1911.
Captain, C.A.M.C., M.O. with the 76th Battalion.
Killed in action, November 10th, 1917.

Leonard Foster Jamieson, Medicine 1908.
Captain, R.A.M.C., Egypt.
Drowned in the Jordan, Palestine, July 1st, 1918.

Herbert Jones, M.B. 1904.
Major, C.A.M.C.
Died, March 5th, 1917.

Gordon Jackson Kean, 1922.
Gunner 67th Battery, C.F.A.
Died May 10th, 1918, at Kimnel Park, Rhyl, North Wales.

Arthur Vincent Leonard, M.B. 1911.
Captain, C.A.M.C.
Drowned, February 27th, 1919.

Neville Hall Little, M.B. 1916.
Captain, C.A.M.C.
Died of wounds, October 29th, 1918, at No. 11 Canadian General Hospital, Shorncliffe, England.

Ivan Bernard Marty, Medicine 1920.
Private in Infantry Battalion.
Died of wounds, April 14th, 1917, at Vimy.

William John Ogilvie Malloch, M.B. 1896.
Lieutenant-Colonel No. 4 Canadian General Hospital.
Died, February 18th, 1919.

Gordon McMichael Matheson, Medicine 1919.
Lieutenant 44th Battalion.
Killed, August 23rd, 1918.

Frank Robertson Mitchell, M.B. 1918.
Surgeon Probationer, R.N.V.R.
Returned to Canada and died, July 18th, 1918.

Herbert Stanley Monkman, M.D., C.M. 1906.
Captain, Canadian Mounted Rifles.
Killed in action, December 1915.

Heber Havelock Moshier, M.B. 1909.
Lieutenant-Colonel No. 11 Canadian F.A.
Killed in action August 29th, 1918.

John McCrae, B.A. 1894, M.B. 1898, M.D. 1910.
Lieutenant-Colonel, C.A.M.C.
Died January 28th, 1918 at No. 14 General Hospital, Wimereux.

John William McDowell, Medicine 1919.
Lieutenant in 1st Canadian Siege Battery.
Accidentally killed, December 13th, 1917.

WALTER WAKE MCKENZIE, M.B. 1914.
Captain, Military Hospital, Shorncliffe.
Died suddenly at Shorncliffe, February 21st, 1917.

WILLIAM STEWART MCKEOUGH, Medicine 1917.
Captain in the 18th Battalion.
Killed in action at Courcelette, September 22nd, 1916.

DUGALD BLACK MCLEAN, M.B. 1913.
Captain in the R.A.M.C.
Killed in action, September 6th, 1916.

EDGAR HAROLD MCVICKER, M.B. 1915.
Lieutenant in the R.A.M.C.
Killed in action, September 10th, 1916.

HAROLD HEBER OWEN, Medicine 1917.
Lieutenant in the 7th Battalion, 1st Canadian Division.
Killed in action, January 30th, 1916.

JOHN FERGUSON PALLING, M.D., C.M.,
Captain, C.A.M.C.
Died, February 2nd, 1918.

ARTHUR ALLAN PARKER, M.B. 1914.
Captain, C.A.M.C.
Died of wounds, October 1918.

THOMAS WILLIAM PARKER PEACOCK, M.B. 1916.
Lieutenant in the C.A.M.C.
Died as result of motor accident in Calgary, May 1917.

MURRAY HUME PATERSON, M.B. 1914.
Captain, R.A.M.C.
Accidentally killed, September 15th, 1916.

WILSON PORTER, Medicine 1920.
2nd Lieutenant, R.F.C. 56th Squadron.
Killed in action, March 24th, 1918.

MATTHEW RAE, Medicine 1915.
Private in the 4th Canadian Mounted Rifles.
Died of wounds while prisoner of war, April 1917.

JOHN HENRY RATZ, M.B. 1895.
Major, C.A.M.C.
Died in Ottawa, February 11th, 1918.

JOHN STANLEY REAUME, Medicine 1918.
Captain Mach. Gun Sec., 241st Bn.
Killed in action, October 17th, 1918.

RUPERT ELWYN RIVERS, Medicine 1919.
Lance-Corporal in the 35th Battalion.
Presumed to have died, June 9th, 1917.

ANDREW ROSS, M.B. 1904.
Lieutenant No. 2 Can. G.H., France.
Killed in action September 29th, 1918.

PERCY ROY SHANNON, M.B. 1917.
Lieutenant, R.A.M.C.
Died of wounds, November 3rd, 1918.

HARRY ROY SMITH, M.B. 1915.
Captain, R.A.M.C.
2nd i/c Re-Ed. Work, Hart House.
Died of pneumonia, Jan. 14th, 1919.

ROBERT SCOTT SMITH, M.B. 1911.
Captain, Medical Services.
Died of poisoning, 31st Dec., 1917.

JAMES ARTHUR STANLEY, M.B. 1916.
Captain, R.A.M.C.
Killed in action, September, 1918.

ERNEST ZAVITZ STIRRETT, M.B. 1915.
Surgeon, R.C.N.S. Niobe.
Died, June 22nd, 1917.

ARTHUR WILLIAM TANNER, M.B. 1899.
Lieutenant-Colonel, C.A.M.C.
Died of wounds at Ypres, June 4th, 1916.

CHARLES EVERETT THOMPSON, M.B. 1916.
Lieutenant in the C.A.M.C.
Died of pneumonia at the Base Hospital, Gerrard St., Toronto, February 3rd, 1917.

JAMES HARVEY TODD, M.B. 1905.
Adjutant and 2nd i/c C.A.M.C., a/D A.D.M.S., M.D. No. 5, Quebec.
Died of pneumonia, October 17th, 1918.

STANLEY ARTHUR WALKER, M.B. 1915.
Lieutenant in the R.A.M.C.
Killed in action, October 15th, 1916, at the Somme.

GUY HALIFAX WALLACE, M.B. 1909.
Captain, R.A.M.C.
Died, December 1918.

ROY CECIL WOODWARD, Medicine 1920.
Sapper Div. Sig. Corps, C.E.
Died of wounds August 27th, 1918.

NORMAN JAMES LANG YELLOWLEES, B.A. 1907, M.B. 1909.
Captain and Adjutant, No. 4 Canadian General Hospital.
Drowned at Salonica, May 5th, 1916.

MILITARY HONOURS.

K.C.R.V.O.

Lieutenant-Colonel Sir E. S. Worthington

C.B.

Colonel A. Primrose
Colonel J. A. Roberts

C.M.G.

Lieutenant-Colonel J. A. Amyot
Colonel D. J. Armour
Brigadier-General E. C. Ashton
Major G. W. Badgerow
Surgeon-General J. T. Fotheringham
Colonel D. W. McPherson
Colonel G. G. Nasmith
Lieutenant-Colonel G. S. Rennie
Colonel W. A. Scott
Colonel A. E. Snell

C.O.B.E.

Colonel G. D. Farmer
Colonel R. D. Rudolf

O.B.E.

Lieutenant-Colonel J. G. Brown
Major J. F. Burgess
Captain W. A. Cardwell
J. C. McLennan
Major B. R. O'Reilly
Major H. Orr
Colonel R. Raikes

D.F.C.

Captain A. T. Whealy

D.S.O.

Captain G. W. Armstrong
Lieutenant-Colonel J. E. Davey
Lieutenant-Colonel J. J. Fraser
Major R. M. Gorseline
Lieutenant-Colonel J. N. Gunn
Lieutenant-Colonel E. B. Hardy
Colonel W. B. Hendry
Lieutenant-Colonel D. P. Kappele —bar to D.S.O.
Major Charles F. Knight
Lieutenant-Colonel T. M. Leask
Major T. H. McKillip
Captain G. A. McLarty
Lieutenant-Colonel Stanley Paulin
Colonel A. E. Snell
Lieutenant-Colonel D. M. Sutherland
Lieutenant-Colonel C. G. Thomson
Lieutenant-Colonel J. H. Wood
Captain H. G. Young

D.S.C.

Surgeon-Probationer W. P. Warner
Flight Lieutenant A. T. Whealy—bar to D.S.C.

M.C.

Captain H. H. Argue
Captain A. C. Armstrong
Captain F. G. Banting
Captain J. E. Barry
Captain T. H. Bell
Major C. A. Briscoe
Captain J. V. Brown—2 bars to M.C.
Captain H. Buck
Major A. A. Campbell
Lieutenant D. M. Campbell
Captain L. A. Carr
Captain J. P. S. Cathcart
Captain J. R. L. Christian
Captain R. C. Coatsworth
Major K. E. Cooke
Captain W. G. Cosbie

MILITARY HONOURS—*Continued.*

Lieutenant G. W. Crow
Captain J. A. Cullum—bar to M.C.
Captain H. C. Davis
Captain O. J. Day—bar to M.C.
Captain A. A. Drinnan
Lieutenant W. S. Duncan
Captain C. P. Fenwick
Captain D. T. Fraser
Lieutenant C. T. Galbraith
Captain W. C. Givens
Captain A. J. Gilchrist
Captain M. E. Gorman
Major G. G. Greer
Captain A. R. Hagerman
Captain H. P. Hamilton
Captain R. I. Harris—bar to M.C.
Captain H. Hart
Captain F. R. Hassard
Major A. K. Haywood
Captain J. N. Humphrey—bar to M.C.
Captain J. R. Irwin
Lieutenant-Colonel E. S. Jeffrey
Major H. B. Jeffs
Captain A. C. Johnston
Colonel G. C. Kidd
Lieutenant H. B. Lang
Captain J. G. Lee
Captain C. T. Lewis
Captain J. A. Linton
Lieutenant A. E. MacDonald
Captain W. S. McClinton
Captain J. C. McCullough
Major A. M. McFaul
Captain P. McGibbon
Captain J. F. McLay
Captain R. D. Mackenzie
Captain R. J. Manion
Captain J. F. S. Marshall
Captain T. W. Moore
Captain V. H. K. Moorhouse
Captain R. H. Morris
Captain J. K. Mossman
Captain A. G. Nasmith
Captain W. F. Nicholson
Captain Eric Osbourne
Major L. C. Palmer—bar to M.C.
Captain A. A. Parker
Captain M. H. Paterson
Captain J. S. Reid
Captain W. E. Sinclair
Captain V. F. Stock
Captain C. G. Sutherland
Captain A. E. Sutton
Major A. H. Taylor
Captain R. H. Thomas
Captain F. M. Walker
Captain D. A. Warren
Captain W. L. Whittemore
Lieutenant-Colonel C. V. Williams
Captain C. S. Wynne
Captain C. R. Young—3 bars to M.C.

M.M.

Sergeant A. J. Bromley
Lieutenant W. C. Little
Lance-Corporal J. E. McGillivray
Staff Sergeant J. F. O'Leary
Bombardier J. B. Symington

Legion of Honour.

Lieutenant-Colonel H. R. Casgrain

Croix de Guerre.

Captain W. H. K. Anderson
Captain A. C. Armstrong
Captain J. A. Cullum
Lieutenant Mary L. Edward
Captain J. F. McLay
Colonel A. E. Snell
Lieutenant-Colonel J. H. Wood

Croix de la Chevalier.

Major A. Y. Massey

MILITARY HONOURS—*Continued.*

Serbian Order of St. Savva.
Major W. H. Aspland
Colonel H. G. Barrie
Captain J. K. Mossman
Captain H. J. Shields

Serbian Red Cross Medal.
Colonel H. G. Barrie

Russian Order of St. Vladimir.
Major W. H. Aspland

Russian St. George's Medal.
Major W. H. Aspland

1914 Star.
Corporal J. C. S. Battley
Lieut-Colonel H. C. Elliot
Lieutenant-Colonel R. S. Pentecost

Mentioned in Despatches.
Lieutenant-Colonel J. A. Amyot
Major R. S. Armour
Captain G. W. Armstrong
Brigadier-General E. C. Ashton
Captain J. E. Barry
Captain T. H. Bell
Lieutenant-Colonel P. G. Brown
Captain H. Buck
Colonel H. A. Bruce
Major F. S. Burke
Major H. H. Burnham
Colonel I. H. Cameron
Lieutenant-Colonel O. A. Cannon
Colonel H. R. Casgrain
Lieutenant-Colonel G. Chambers
Lieutenant-Colonel D. A. Clark
Captain W. A. Clarke
Major D. J. Cochrane
Captain G. M. Dale
Lieutenant-Colonel J. E. Davey
Major A. W. M. Ellis
Surgeon-General J. T. Fotheringham
Lieutenant-Colonel J. J. Fraser
Captain A. J. Gilchrist
Colonel P. G. Goldsmith
Lieutenant-Colonel D. A. L. Graham
Captain T. F. Graham
Major G. G. Greer
Captain C. G. Gunn
Lieutenant-Colonel E. B. Hardy
Captain F. R. Hassard
Colonel W. B. Hendry
Major W. L. Hutton
Colonel L. E. W. Irving
Major H. B. Jeffs
Lieutenant A. J. Kilgour
Captain R. R. McClenahan
Major S. H. McCoy
Major A. M. McFaul
Major T. H. McKillip
Lieutenant-Colonel W. T. M. McKinnon
Major G. H. McLaren
Captain G. A. McLarty
Colonel D. W. McPherson
Lieutenant-Colonel C. S. McVicar
Lieutenant A. S. Malcolmson
Captain A. F. Mavety
Lieutenant-Colonel H. H. Moshier
Colonel G. G. Nasmith
Major E. A. Neff
Major H. Orr
Lieutenant H. H. Owen
Lieutenant-Colonel K. D. Panton
Captain L. A. C. Panton
Lieutenant-Colonel H. C. Parsons
Lieutenant-Colonel G. R. Philp
Captain D. J. Prendergast
Colonel A. Primrose
Captain G. W. Racey
Captain J. A. Reid
Captain J. S. Reid
Lieutenant-Colonel G. S. Rennie
Captain W. A. Richardson
Colonel J. A. Roberts

MILITARY HONOURS—*Continued.*

Major D. E. Robertson
Lieutenant A. E. Ross
Lieutenant-Colonel E. R. Selby
Colonel A. E. Snell
Lieutenant-Colonel G. S. Strathy
Captain S. J. Streight
Lieutenant-Colonel D. M. Sutherland
Major C. W. Waldron
Captain W. C. Walsh
Captain R. E. A. Weston
Captain D. E. S. Wishart
Lieutenant-Colonel Sir E. S. Worthington
Lieutenant-Colonel T. W. H. Young
Captain H. G. Young

MEDALLISTS.

Medicine.

g. *gold medal;* s. *silver medal.*

Year.
58 Oille, L. S.–g.
Aikins, M. H.–s.
Millar, T.–s.
59 Barnhart, C. E.–g.
King, J.–s.
Francis, W. F.–s.
60 Bascom, J.–g.
Playter, E.–s.
Tisdell, F. B.–s.
Morton, E. D.–s.
Ogden, W. W.–s.
Martyn, D. H.–s.
61 Hudson, A.–g.
Elliott, J. D.–s.
62 Dolster, J.–g.
De Grassi, G. P.–g.
63 Ramsay, W. F.–g.
64 McLaughlin, J. W.–g.
65 Burnham, E. L.–g.
McCarthy, J. L. G.–s.
Kitchen, E. E.–s.
66 Mickle, W. J.–g.
McCullough, J.–s.
Wadsworth, J. J.–s.
67 Sparks, T.–s.
Palmer, R. N.–s.
Harbottle, R.–s.
Eccles, F. R.–s.
McFarlane, N.–s.
Newton, J. H.–s.
68 Brown, J. P.–g.
Hunt, R. H.–s.
Howe, T. C.–s.
69 Graham, J. E.–g.
Humble, C.–s.
McCollum, J. H.–s.
Bentley, T. B.–s.
70 Greenless, A.–g.
Burgess, T. J. W.–s.
Smith, C. M.–s.
Standish, J.–s.
Wagner, W. J.–s.
Burt, W.–s.
Williams, A. D.–s.
71 Forrest, W.–g.
Moore, C. Y.–s.
Henning, N. P.–s.
Delamater, R. H.–s.
72 Zimmerman, R.–g.
Crozier, J. B.–s.

Year.
73 Close, J. A.–g.
Beeman, M. I.–s.
Wright, A. H.–s.
Hagel, S. D.–s.
74 Fraser, D. B.–g.
Brown, O. C.–s.
Farewell, A.–s.
Cameron, I. H.–s.
Shaw, G.–s.
Fraser, D.–s.
75 Britton, W.–g.
White, J.–s.
Bennett, J. H.–s.
Eakins, J. E.–s.
76 McPhedran, A.–g.
Lackner, H. G.–s.
Bowerman, A. C.–s.
Wilson, W. J.–s.
77 Stuart, W. T.–g.
Orr, R. B.–s.
Richards, N. D.–s.
78 Griffin, H. S.–g.
Meek, H.–s.
Bonnar, J. D.–s.
Kennedy, G. A.–s.
Gardiner, J. H.–s.
79 Burt, F.–g.
Mills, R. P.–s.
Chappell, W. F.–s.
80 Cross, W. J.–g.
Bryce, P. H.–s.
Ferguson, J.–s.
81 Duncan, J. H.–g.
82 Wallace, R. R.–g.
Duncan, J. T.–g.
83 Robinson, W. J.–g.
Dolsen, F. J.–g.
84 Clerke, J. W.–g.
85 Howell, J. H.–g.
Carr, L.–s.
Saunders, R. M.–s.
Hoople, H. N.–s.
86 Peters, G. A.–g.
Noecker, C. T.–s.
Johnston, D. R.–s.
87 Ego, A.–g.
88 Féré, G. A.–g.
Galloway, J.–s.
89 Chambers, G.–g.
Collins, J. H.–s.

Year.
89 Godfrey, F. E.–s.
90 Barker, L. F.–g.
Cullen, T. S.–s.
Philip, W. H.–s.
McFarlane, M. T.–s.
McGillivray, C. F.–s.
91 Barnhardt, W. N.–g.
Bollen, P.–s.
Boyd, G.–s.
McGorman, G.–s.
92 Bruce, H. A.–g.
Middlebro, T. H.–s.
Gowland, R. H.–s.
Brown, J. N. E.–s.
93 Harvie, J. N.–g.
South, T. E.–s.
Elliott, W.–s.
Futcher, T. B.
Harvey, E. E. Æq–s.
94 McCollum, W. J.–g.
Rutledge, H. N.–s.
Crain, W. E.–s.
Johnston, H. A.–s.
95 Merritt, A. K.–g.
McKay, T. W. G.–s.
McCrae, T.–s.
Hunter, A. J.–s.
96 McCaig, A. S.–g.
Roberts, E. L.–g.
Graef, C.–s.
Goldie, W.–s.
Macklin, A. H.–s.
97 Elliott, J. H.–g.
Hume, J. J. C.–s.
Nichol, R.–s.
Yeomans, W. L.–s.
98 McCrae, J.–s.
Sutherland, G. A.–s.
White, W. C.–s.
Cahoon, F.–s.
99 Wells, W.–g.
Hargrave, H. G.–s.
Piersol, W. H.–s.
Gow, J.–s.
00 Scott, P. L.
Bell, C. C. Æq–g.
Howland, G. W.
Revell, E. D. Æq–s.
Carder, E. D.–s.
01 Clarkson, F. A.–g.

Year.
01 McIlwraith, D. G.–s.
Cleland, F. A.–s.
Carswell, W. A.
Cohoe, B. A. Æq–s.
02 Roaf, H. E.
Saunders, W. P. Æq–g.
Fletcher, G. W.–s.
Moir, A.–s.
Archer, A. E.–s.
03 Oille, J. A.–g.
Phillips, J.–s.
Yin, S. C.–s.
Wilson, G. E.–s.
04 McCulloch, R. J. P.–g.
Kinghorn, A.–s.
Anderson, R. W.–s.
Walker, S. B.–s.
05 Lemon, W. S.–g.
Ford, G.–s.
Merritt, W.–s.
Gowland, M. E.–s.

Year.
06 McNeill, H. M.–g.
Holbrook, J. H.–s.
Dickson, E. C.–s.
Moorhead, A. S.–s.
07 Gray, G. C.–g.
McVicar, C. S.–s.
Schinbein, A. B.–s.
Cannon, O.–s.
08 Richards, G. E.–g.
Robertson, W. A.–s.
Buswell, R.–s.
Harkness, J. G.–s.
09 Parker, C. B.–g.
Tytler, W. H.–s.
Marcy, W. J. M.–s.
Brown, A. G.–s.
10 Watt, J. C.–g.
Follett, J. V.–s.
Butterfield, R. M.–s.
Barker, P. W.–s.
11 Livingstone, J. M.–g.
Eagles, A. S.–s.

Year.
11 Bouck, C.
Christie, N. A. Æq–s.
Campbell, J. G. A.–s.
12 McClenahan, R. R.
McPhedran, F. M., Æq–g.
Breslin, L. J.–s.
Wellman, A. L.–s.
13 Scott, W. A.
Fletcher, A. A. Æq–g.
Simon, K. M. B.–s.
Wookey, H. W.–s.
Brown, C. P.–g.
Irwin, O. M.–s.
Brodey, A.–s.
Darby, G. E.–s.
14 Detweiler, H. K.–g.
Hewitt, S. R. D.–s.
McKenzie, K. G.–s.
Brown, H. E.–s.

Star Medallists.

Year.
67 Palmer, R. N.
68 Hunt, R. H.
Brown, J. P.
Cassidy, J. J.
69 Graham, J. E.
70 Burgess, T. J. W.–g.
Greenless, A.–s.
Wagner, W. J.–s.
71 Moore, C. Y.–g.
Henning, N. P.–s.
Forrest, W.–s.
72 Zimmerman, R.–g.
Crozier, J. B.–s.
73 Meldrum, N. W.–g.
Close, J. A.–s.
Hagel, S. D.–s.

Year.
74 Brown, O. C.–g.
Farewell, A.–s.
Campbell, A. J.–s.
75 Britton, W.–g.
White, J.–s.
Bennett, J. H.–s.
76 Lackner, H. G.–g.
McPhedran, A.–s.
Bowerman, A. C.–s.
77 Stuart, W. T.–g.
78 Bonnar, J. D.–g.
Meek, H.–s.
Griffin, H. S.–s.
79 Burt, F.–g.
80 Cross, W. J.–g.
Bryce, P. H.–g.

Year.
81 Duncan, J. H.–g.
82 Wallace, R. R.–g.
83 Robinson, W. J.–g.
86 Peters, G. A.–g.
89 Collins, J. H.–g.
Chambers, G.–s.
90 Barker, L. F.–g.
91 Barnhardt, W. N.–g.
92 Middlebro, T. H.–g.
Bruce, H. A.–s.
96 McKay, T. W. G.
Rannie, J. A.
99 Hill, H. W.
03 McCrae, T.
08 Harvey, W. H.–g.
17 Dickson, E. C.–g.

DEGREES IN MEDICINE, CONFERRED BY THE UNIVERSITY OF TORONTO AT THE ANNUAL CONVOCATION APRIL 1918.

Agnew, George Harvey
Aitchison, William Stanley
Archibald, Cedric Hughes, B.A.

Batten, Walter Howard
Benwell, Charles Edward
Boles, William Patterson
Bond, Charles Ernest
Boyd, Miss Gladys Lillian
Bray, Miss Mabel
Brown, Charles Clinton
Bulmer, Miss MaBelle Audrey Cecelia

Cain, Robert Francis
Carlisle, Vernon
Cohen, Benjamin, B.A.
Copp, Joseph Clarence
Couch, Albert Edward Hessey
Coulson, Earl Glen
Cox, M. Armacost
Cromarty, Robert Parker, M.A.

Edmonds, Lewis Cawsey
Eede, John Russell Lowell
Erb, Isaac H.

Farmer, George Richard Devey
Feader, Harry
Findlay, Charles Alexander

Geddes, William Alexander Sloane

Harris, William, B.A.
Henry, Willard Jarvis
Holmes, Aurdy Benjamin, B.A.
Holmes, William Hugh

Kennedy, Robert Bryson

Lazenby, Frederick Sylvester
Leach, James Wesley
Leonard, Samuel C., B.A.
Lloyd, Irwin McMurchie
Locke, Ward Beecher
Low, Donald MacKintosh

Malyon, Roy Holdershaw
Meader, Miss Florence Mary
Mitchell, Frank Robertson

McClelland, John Harold Campbell
MacDonald, James Duncan
McKay, Donald Walter
McNally, Harry James

Nesbitt, James Henry
Nettleton, Edwin

Owen, Trevor

Parks, Wilfrid Rowan
Perlman, David
Pratt, Clarence Victor

Quint, Walter Southard, B.A.

Rankin, Roy William
Riseborough, Ernest Cecil
Robertson, James Murray

Scott, William John
Siegel, Morris
Simpson, Roy Wilfred
Sinclair, James Ward
Smith, Joseph Reginald, B.A.
Snider, Miss Lily Huldah, B.A.
Soules, Melville Hall
Spence, Roy Johnston
Stephenson, Benjamin George
Stevenson, George Herbert
Strachan, James Grant
Street, Harold Wilbert
Stuart, Lionel Marshall
Sullivan, Herbert

Tomlinson, Nelson Freeman

Van Etter, Omar

Wagner, LeRoy
Walker, Frank Norman
Werden, William Austin
West, Stephen Everard Thomas

STUDENTS AT THE UNIVERSITY WHO RECEIVED THE DEGREE IN MEDICINE IN JULY, 1918.

Alton, John Arthur

Baker, Robert Henry
Barnes, Walter Bruce
Bentley, George Andrew

Cunningham, Wallace Herbert

Fleming, Robert James Mortimer

Gamey, Lyman Roswell
Garbutt, Charles Thomas Percival

Hughes, John Vernon

Jones, Howard Owen

Lane, Walter Ross
Lunz, Gerald Joseph

McCallum, Duncan
McCosh, John Thornton
McNevin, Frank Patrick
Macpherson, Arnold William

Rymal, Lloyd Cecil

Tucker, Richard Massie

Valens, Ashley William

STUDENT AT THE UNIVERSITY WHO RECEIVED THE DEGREE IN MEDICINE IN DECEMBER, 1918.

Banting, Oswald F.

FACULTY OF MEDICINE.

REGISTER OF STUDENTS, 1918-19.

First Year.

Adams, Miss Dora.....Toronto
Allan, C. C.....Toronto
Anderson, E. S.....Toronto
Arbuckle, D. S.....Toronto
Atkinson, W. C...Vancouver, B.C.
Austin, J. W.....Renfrew

Baker, Miss F. M.....Toronto
Baker, Miss Grace.....Chatham
Ballantyne, P. M.....Toronto
Bankwitz, Miss A. A.....Toronto
Barr, Miss C. A.....Merlin
Bartlett, R. D.....Brampton
Batson, H. H.....Brantford
Beattie, O. M.....Batteau
Bell, G. C.....Dundalk
Bell, J. K.....Toronto
Bennett, A. E.....Grand Valley
Bews, J. Y.....Hamilton
Bishop, C. A.....Toronto
Bochner, M.....Toronto
Borland, T. H.....Innerkip
Boulding, C. R.....Putnam
Brady, F. A.....Toronto
Breslin, R. H.....Owen Sound
Brewster, W. R.....Brantford
Briant, T. E.....Toronto
Brodie, Miss M. H.....Stouffville
Bronstein, Miss Rose.....Toronto
Brown, N. R.....Toronto
Burridge, Miss M. F., Victoria, B.C.
Byrne, U. P.,
New Westminster, B.C.

Calderone, A. J...St. Catharines
Cameron, W. S.....Southampton
Campbell, D. M.....Kerrwood
Cannon, J. T.....Toronto
Carmichael, Miss A. I...Peterboro
Carson, R. J.....Orillia
Caven, W. R.....Toronto
Challener, R. E. S.....Toronto
Cheney, Miss M. J.....Ottawa
Clifford, C. H.....Toronto
Cohen, J. L.....Toronto
Cohen, W. A.....Toronto
Colvin, L. T.....Picton
Comisky, Miss E. H.,
Richmond Hill

Cook, Miss S. M. L.....Toronto
Cooper, J. M.....Sudbury
Cooper, W. M.....Sudbury
Copeman, E. S.....Paris
Copp, E. F. F.....Clinton
Couch, A. J.....Toronto
Coyne, D. R.....Leamington
Cray, J. F.....Guelph
Curran, J. K.....Orillia
Dales, C. W.....Drayton
Dalrymple, Miss L. A.,
Waskada, Man.
Denison, L.....Toronto
Devins, W. P.....Thornbury
Dimitroff, T.....Toronto
Douglas, H. S.....Springfield
Drummond, H. A.....Toronto
Dunton, A. S.....Paris
Dusseau, C.....Toronto
Dyer, H. F.....Allandale

Ewing, C. H.....Fergus

Farley, J. W.....Trenton
Fassel, E. G.....Toronto
Fatum, O.....Gowanstown
Faulkner, Miss I. G.....Duntroon
Fell, F. D.....Hamilton
Fetterly, Miss M. E.....Cornwall
Fisher, R. S. M.....Georgetown
Fitzgerald, G. J.....Vasey
Fleischauer, R. L.....Kitchener
Fletcher, G. M.....Toronto
Ford, J. R.....Dutton
Fortune, C. W.....Walkerton
Foster, F. H.....Toronto
Fowler, M. N.....Hamilton
Frank, F. W.....Hamilton

Gamble, J. E. D.....Brantford
Gauld, Miss F. M.....Toronto
Gemmel, J. G.....Ayr
Gilbertson, R. L.....Simcoe
Glass, S. J.....Toronto
Gleeson, H. J.....Napanee
Goldberg, L.....Toronto
Golden, I. M.....Toronto
Gordon, A.....Toronto
Gordon, G.....Toronto

Graham, J. D.....Toronto
Graham, R. W.....Toronto
Gratz, C. M.....Sunnyslope, Alta.
Gray, F. E.....Listowel
Greenberg, D. Y.....Windsor
Greenberg, J. H.....Toronto
Grieve, J. G.....Millbank
Gruber, S.....Toronto

Hall, G. C. R.....Little Britain
Hall, J. L.....Phelpston
Hames, C. F. W.....Beeton
Handelman, B.....Toronto
Hardie, G. C.....Victoria, B.C.
Hartnett, G. J.....Toronto
Hawkins, W. D.....Toronto
Haynes, J. J.....Phelpston
Henderson, J. J.....Toronto
Henderson, W. S.....Sarnia
Henry, G. G.....Markdale
Henry, L. L.....Niagara Falls
Herold, R. E.....Shakespeare
Hipwell, R. E.....Alliston
Howard, F.....Cayuga
Howell, Miss H. D.....Welland
Howse, G. O.....Aylmer
Hugill, A. E.....Toronto
Hunt, V. G.....Calgary, Alta.
Hunter, Miss D. L.,
Kuangning, Manchuria
Hynes, B. J.....St. Catharines

Ireland, G. I.....Trenton

Jessel, L.....Toronto
Johnston, Miss B. M. A.,
Port Hope
Johnston, J. A.....Kars
Johnston, J. L.....Inwood
Johnston, W. V.....Auburn
Jones, C. A.....Kelowna, B.C.
Judson, F. M.....Lyn

Kemp, D. G.....Whitevale
Kernick, M.....Toronto
Kinkead, J. C.....Britton
Knapp, R. M.....Hamilton
Knight, E. W.....Toronto
Kohan, M.....Toronto

Large, R. G...Port Simpson, B.C.
Lavine, I.....Toronto
Levin, S. J.....Windsor
Levinson, R. M.....Kenora
Lewis, F. I.....Orangeville
Lovell, W. L.....Gorrie
Luke, W. R. F.....Toronto
Lyon, E. K.....Blyth

Maginley, H. D.,
Lyons, Antigua, B.W.I.
Maitland, C. W.....Toronto
Maloney, F. G. H.....Toronto
Manning, R. F.....Forest
Markowitz, J.....Toronto
Meehan, Miss G. B.....Lindsay
Miller, J. B.....Brantford
Miller, S.....Toronto
Miner, H. B.....Humberstone
Moffat, G. F.....Weston
Moore, W. N.....Uxbridge
Moran, H. F.....Codrington
Morrison, N. F.....Corunna
Morton, W. R.....Proton
Mowat, H. F.....Acton
Murdoch, D. J.....Markdale

McCallum, A. P.....Dutton
McClelland, Miss A. L....Toronto
McCluskey, E. R.....Alliston
McCormick, Miss H. H...Toronto
McCosh, R. A.....Kincardine
Macdonnell, R. V.,
Dalhousie Mills, Que.
MacDonnell, W. G.....Toronto
McGarvey, M. R.....Petrolia
Mackay, D. A.....Ingersoll
MacLachlan, Miss S. R....Toronto
McLaughlin, P. B.....Toronto
McLean, W. C.....Collingwood
McLeod, A. M.....Kincardine
McMaster, E. A.....Utopia
McMurray, W. J....Niagara Falls
McNabb, J. B.....Melbourne
MacNeil, R. R.....Oakville

Nichol, K. D.....Brantford
Nicholls, S.....Toronto

O'Neill, C. N.....Clandeboye
Orechkin, L.....Windsor
Organick, M.....Toronto
Orr, Miss J. S.....Toronto
Owens, Miss M....Grenville, Que.

Page, N. A.....Brockville
Page, S. U.....Toronto
Papish, A.....Toronto
Parker, H. F.....Woodstock
Parry, G. O.....Toronto
Patry, F. L.....Toronto
Patterson, J. A.....Walkers
Pauley, G. E.....Gananoque

Perkin, F. S.....Toronto
Philp, D. P.....Toronto
Pickford, G. S.....Toronto
Polack, S. S.....Toronto
Pritchard, J. R.,
North Wakefield, Que.
Purdy, A. D. T.....Toronto

Quance, T. S.....Phoenix, B.C.

Rahner, H. R....Rochester, N.Y.
Ranta, O. O.....Toronto
Rendall, S. D.....Plattsville
Rhodes, Miss G...Bergerville, Que.
Richardson, W. F.....Maitland
Richer, Miss F.....Lachute, Que.
Riddell, J. R.....Newton
Robert, J. T.....Chatham
Robertson, Miss E. M.....Toronto
Robinson, A. J.....Toronto
Roseborough, A. S.,
Vermillion, Alta.
Ross, A. C.....Kirkfield
Ross, S. G.....Toronto
Rotenberg, H.....Toronto
Rowen, E. H.....Guelph
Russell, D. C.....Toronto
Sackin, I. J.....Toronto
Scanlon, M. F.....Toronto
Shaver, E. O.....Toronto
Sherman, S.....Toronto
Shields, W. L.....Coboconk
Silverman, N.....Kenora
Simpson, Miss R. R. M....Toronto
Slaughter, C. B. P.....Toronto
Smith, H. M.....Chatham
Smookler, W. H.....Toronto
Snell, G. C.....Alliston
Snider, D. I.....Windsor
Spence, J. E.....Orangeville
Spratt, L. M.....Caledonia
Steinworzel, W.....Toronto
St. John, H. F.....Uxbridge
Suffel, S. C.....Smith's Falls
Summerfeldt, Miss P. F....Toronto
Swan, D. C. S.....Toronto
Switzer, W. A. W.....Science Hill

Tanner, F. W.....Newton
Taylor, O. L.....Bolton
Temes, J. H.....Toronto
Teskey, J. W.....Toronto
Torrance, A. M.....Listowel

Urquhart, J. L.....Sandford
Urquhart, R. W. I.,
Wolseley, Sask.

Veale, W. T.....Bowmanville
Volinsky, I. R.....Toronto

Waddell, R. R.....Hamilton
Walker, R. J.....Smith's Falls
Walters, W. R.....Toronto
Walton, G. R.....Forest
Wansbrough, R. M.,
Grand Valley
Watson, W. H.....Grand Valley
White, Miss K. M.,
Moose Jaw, Sask.
White, M. F.....Lindsay
Wilcox, F. A.....Toronto
Williams, J. J. P.....Toronto
Wilson, W. H.....Toronto
Wilson, W. S.....Toronto
Woodrow, W. H.....Coldwater
Woolfson, J.....Toronto

Young, Miss A. M.....Toronto
Young, Miss P. V.....Peterboro

Second Year.

Allan, F. N.....Wroxeter
Anderson, J. O.....Toronto
Andrew, O.....Oakville
Appel. S.....Toronto
Armstrong, G. W.....Uxbridge

Baker, S. E.....Toronto
Barnes, L. S.....Toronto
Barton, E. R.....Toronto
Bates, J. E.....Toronto
Bell, J. W.....Windsor
Belyea, C. C.....Kenora
Benson, J. G.....Wellington
Bicknell, E. A.....Toronto
Bird, E. S.....Gananoque
Bird, H. G.....Gananoque
Blott, R. D.....Dunnville
Bochner, T. W.....Guelph
Boley, J. P.....Huntsville
Bowie, D. J.....Midland
Bowyer, Miss M. E.....Toronto
Boyes, T. L.....Mount Hope
Bradley, B. V.....Toronto
Bryan, C. G.....Toronto
Bull, R. C.....Weston
Burrows, Miss D. J.....Harriston

Carruthers, Miss H. R.....Toronto
Carruthers, W. L.....Elmvale
Carrow, G. W.....Toronto
Carson, R. A.....Barrie
Case, G. E.....Dungannon
Cavanagh, J. L.....Owen Sound
Chase, Miss L. A...Greenwich, N.S.
Chung, Miss V.....Victoria, B.C.
Cleghorn, I. M.....Baldur, Man.
Clendenan, D. G.....Toronto
Coliton, J. H.....Toronto
Cosgrove, K. W....Asheville, N.C.
Creen, Miss F. A.....Hamilton
Crowley, L. J.....Gadshill
Cruickshank, F.....Weston
Cumming, J. F.....Turnerville

Danard, B. P.....Owen Sound
Devitt, F. B.....Toronto
Dickson, J. A.....Niagara Falls
Dodd, Miss A. I.....Toronto
Dunning, G. W.....Cumberland

Eisen, D.....Toronto
Ellis, E. G.....Sarnia
Evans, G. F.....St. Mary's

Fallon, J. T.....North Bay
Farquharson, R. F.....Agincourt
Fine, H. P.....Toronto
Fleming, E. G.....Cobourg
Forrest, J. A.....Toronto
Fowler, H. G.....Toronto
Francis, A.....Vancouver, B.C.

Gauld, W. H....Tamsui, Formosa
Gay, Mrs. St. C. R.,
New York, N.Y.
Gebirtig, T.....Toronto
Gill, D. G.....Victoria Harbor
Gordon, R. I.....Stratford
Graham, A. H.....Toronto
Grainer, M.....Toronto
Gray, W. H.....Toronto
Green, N. H.....Agincourt
Griffin, F. R.....St. Thomas
Grigg, V. S.....Bruce Mines

Hale, A. S.....Stratford
Hamlin, L. E.....Kincardine
Hanley, E. G.....Midland
Harcourt, J. A. A.....Cayuga
Harold, R. L.....Caron, Sask.
Harris, G. W.....Rodney
Harvey, M. C.....Tugaske, Sask.
Harvey, W. H.....Princeton
Heard, K. M.....St. Thomas
Hendry, J. R.....Toronto
Hetherington, H. W., St. Catharines
Hopkins, J. E.....Stoney Creek
Howe, H. F.....Palmerston
Hubbard, J. P.....Forest
Hurley, J. C.....Toronto
Hutchison, J. H.....Kinley, Sask.
Hutton, F. T.....St. Mary's

Ireland, F. A.....St. Catharines
Ives, R. E.....Colborne

Jennings, G. H.....Brantford
Junkin, F. L.....Toronto

Kemp, W. N.....Toronto
Kerr, J. B.....Chatham
Kilgour, A. J.....Cornwall
Kiteley, P.....Glen Allan
Kreiner, J. H.....Kitchener

Laing, W. C.....Brantford
Lamont, J. L.....Brussels
Lancaster, W. E. G....Kingsville
LaVenture, G. E.....Toronto
Lee, W. W.....Stoney Creek
LeFurgey, J. A.,
North Bedeque, P.E.I.
Linklater, E. W.....Wingham
Logan, H. D.....Niagara Falls
Long, E. C.....Listowel
Lowrie, R. J.....Toronto
Lyons, G. W.....Brampton

Mackersie, W. G.....Atherley
Marshall, H. S.....Mono Centre
Martin, C. A.....Milton West
Martin, G. G.....Campbellford
Merritt, E. G.....Chatham
Millar, M. E.....Highgate
Minns, J. E.....Tweed
Montgomery, S. R. P.....Toronto
Monypenny, Miss A. D....Toronto
Morgan, A. E.....Toronto
Mounce, A. R. E.....Oshawa
Myers, F. C.....St. Mary's
McClelland, J. C.....Brampton
McClure, R. B.....Toronto
McClure, W. B.....Brampton
McCormack, O. L.....Toronto
McCormick, W. K...Amherstburg
McCullough, Miss D. J....Toronto
Macdonald, Miss F., Pinette, P.E.I.
McDonald, R. H.....Lakeside
MacDonald, W. G.....Toronto
McGarry, J. R.....Niagara Falls
MacFarlane, J. A...Nokomis, Sask.

McFaul, A. M.....Collingwood
McInnis, T. J.....Regina, Sask.
McKee, W. A.....Millbank
McLellan, C.....Mount Forest
McNicce, J. A.....Toronto
McVean, H. C.....Toronto

Nesbitt, Miss E.....Toronto
Nodwell, G. R.....Grand Valley

O'Connor, M. J.....Toronto
Oke, Miss I. R.....St. Catharines
O'Leary, F. J.....Toronto
Orton, J. H.....Orillia

Palmer, W. S.....Toronto
Parnell, H. M.....St. Catharines
Perfect, F. R.....Toronto
Pollock, J.....Toronto
Pratt, R. S.....Orangeville
Prendergast, D. J.....Toronto
Price, C. K.....Toronto

Riddell, W. R.....Beaverton
Robinson, P. J.....Toronto
Running D. H.....Agincourt
Russell, Miss M. P.....Toronto
Ryan, T. J.....Toronto

Sansone, A. J.....Hamilton
Scott, J. F.....Barrie
Shaul, N.....Toronto
Shaul, S.....Toronto
Shaw, A. E.....Bluevale
Shier, L. V.....Toronto
Skinner, H. A. L.....Guelph
Simpson, R. N.....Thornhill
Sinclair, K. Y.....Meaford
Speck, J. T.....Toronto
Stanley, A. M.....Lucan
Stone, A. L.....Hawkestone
Stone, R. S.....Chatham
Sullivan, O. P.....Orillia

Taylor, R. E.....Woodstock
Temes, S.....Toronto
Templin, Miss M. I.....Fergus
Teskey, L.....Toronto
Thompson, A. A.....Penetang
Tom, Miss M. I.....Goderich
Trapp, Miss D. M.,
New Westminster, B.C.
Truscott, R. S.....Hamilton
Tucker, W. L.....St. Thomas

Underhill, F. W.....Aurora
Urquhart, C. H.....Toronto

Watson, J. A.....Snelgrove
Watson, M. C.....Bolton
Wellwood, M. B...Richmond Hill
Williams, C. V.....Hamilton
Wilson, W.....Toronto
Wrong, H. A.....Aylmer

Third Year.

Anderson, A. L...Saskatoon, Sask.
Arthur, W. S.....Toronto

Balfe, T. H.....Hamilton
Bell, E. C.....Stayner
Bird, G. L.....Brighton
Birrell, R. G.....Pinkerton
Blampin, Miss W. A.,
Westmount, Que.
Blatz, W. E.....Hamilton
Blye, R. A.....Oakville
Brady, H. A.....Toronto
Bromley, A. J.....Toronto
Brown, Miss C. A.....Toronto
Bulmer, F. M. R.....Toronto
Bulmer, H. R.....Toronto
Byers, J. W. R.....Bailieboro

Campbell, F. C.....Hepworth
Carlisle, A. M.....Peterboro
Claridge, V. O.....Grand Valley
Crehan, W. H.....Calgary, Alta.
Cryderman, W. J.....Walkerton

Dales, M. G.....Drayton
Danis, J. T.....Ottawa
Dawson, L. E.....Toronto
Deavitt, J. B.....Toronto
Dollar, G. L.....Toronto
Dow, W. W.....Toronto
Doyle, R. H.....Toronto
Duncan, W. S.....Port Credit

Eadie, G. S.....Toronto
Edmonds, W. B.....Toronto
Ellis, E. W.....Toronto

Folinsbee, Miss M. E.....Toronto
Fraser, G. M.....Toronto

Gallaugher, L. C.....Lisle
Garratt, Miss G. C.....Toronto
Glasgow, G. K.....Tupperville

Gillrie, R. B.....Drayton
Grady, Miss L. R.....Peterboro
Green, C. O. P.....Port Hope

Hamill, F. C.....Meaford
Harris, C. W.....Toronto
Harrison, Miss E. D.....Toronto
Helston, G. E.....Toronto
Henry, C. R.....Drayton
Hepburn, J.....Vancouver, B.C.
Hill, C. E.....Richmond Hill
Hobson, W. J.....Milford
Hopkins, H. E.....West Toronto

Johnson, J. H.....Kenora
Johnston, H. W.....Drayton

Kilborn, L. G.....Chengtu, China
Koster, B. M.....Toronto

Langhorn, C. R.....Hamilton
Latchford, J. K.....Toronto
Laughlin, E. R.....Point Anne
Lee, P. A.....Kingsville
Lehman, E. J.....North Bay
Lehrman, D.....Toronto
Leonard, P. J.....Toronto

Malcolmson, A. S...St. Catharines
Mallin, D.....Toronto
Markowitz, C. A.....Toronto
Martin, A. D.....St. Mary's
Martin, R. C.....Newburgh
Mayne, C. H.....Drayton
Middleton, R. H.....Caledonia
Mills, O. G.....Tottenham
Moffat, W. W.....Teeswater
Montgomery, R. C.....Harriston
Morris, N. D.....Orillia
Murray, D. W. G.....St. Pauls
Murray, J. K. P.....Toronto

McCarter, A. B.,
Dawson, Yukon Territory
McCorvie, C. R.....Chatham
McDonald, J. J. A.....Orillia
McDonald, J. G. L., Little Current
Macdonald, J. H. A.....London
McGarry, J. M.....Niagara Falls
McHugh, M. J.....Orillia
McKenzie, W. L.....Toronto
McKinnon, N. E.....Priceville
McPherson, R. J.....Puslinch
McQuitty, M.....Douglas

Newhouse, J. A.....Snelgrove
Noonan, W. T.....Mount Forest

O'Brien, J. M.....Erinsville
Oreshkin, I. W.....Windsor

Pedley, W. H.....Woodstock
Pennock, G. M.....Ottawa
Price, Miss R.....Libau, Russia

Ramsey, G. H. S.....Toronto
Rapp, B.....Toronto
Roger, I. B.....Fergus
Russell, S. M.....Owen Sound

Seymour, R. A....Vancouver, B.C.
Scott, H. R.....Maxville
Sheppard, R. J.....Queenston
Shoniker, H. J.....Toronto
Slocombe, G. W.....Port Dover
Smylie, R. T.....New Liskeard
Sneath, P. A. T.....Toronto
Speers, Miss F. E.....Allandale
Stover, I.....Chatham
Sutherland, J. L...St. Catharines
Switzer, J. W.....St. Mary's

Thomas, M. E.....Toronto
Thomson, Miss A. E.,
Lowerre Summit, Yonkers, N.Y.
Tice, J. W.....Oshawa
Tipping, C. E.....Toronto
Trackman, J. A.....Toronto
Turnbull, A.....Canfield

Van Wart, A. F...Fredericton, N.B.

Walden, A. P.....Guelph
Walters, A. G.....Southend
Watson, C. H.....Bolton
Weir, N. A.....Toronto
Weissgerber, L. A.,
Nielson, Mont., U.S.A.
Wilkinson, F. W.....Toronto
Williams, M. M.....Beeton
Williamson, Miss A. B...Beaverton
Wladowsky, Miss M.....Toronto
Woodhouse, W. W., Niagara Falls

Zarnke, E. E.....Desboro
Zwick, F. F.....Stirling

Fourth Year.

Anderson, J. P.....Wilsonville
Armstrong, H. G.....Brussels
Ayer, Mrs. I. T.....Okotoks, Alta.

Baker, H. E.....Elmsvale
Bartley, Miss K. M.....Toronto
Beamish, W. F...Coronation, Alta.
Bell, G. L.....Oro Station
Bicknell, N. J.....Toronto
Brown, M. J.....Toronto
Burns, B. R.....Toronto

Cameron, G. C.....Toronto
Clouse, E. B.....Toronto
Cross, W. D. S.....Gravenhurst
Curtin, Miss A. A.....Kemptville

Dafoe, W. A.....Madoc
Dickson, C. S.....Niagara Falls
Dickson, W. B.....Niagara Falls
Docherty, J. F.....Seaforth

Eagles, G. H.....Owen Sound
Ellis, T. A.....Niagara Falls

Ferguson, H.....Uxbridge
Feader, F.....Toronto
Ferrier, C. W. G.....Mimico

Gillespie, W. F....Edmonton, Alta.
Glassberg-Volpe, A.....Toronto

Hague, O. G.....Toronto
Hall, R. C.....Calgary, Alta.
Hendry, H. W.....Toronto
Henry, W. E.....Markdale
Hogarth, W. P.....Fort William
Huether, A. L.....Guelph

Irvine, P. L.....Drayton

Johnston, W. E.....Toronto
Jordan, G. A.....Toronto

Kelly, Miss F. A.....Sudbury
Kinsman, J. D.....Fonthill

Lanspeary, W. D.....Windsor
Little, H. S.....Ridgetown
Little, W. C.....Barrie
Lloyd, F. P.....Saskatoon, Sask.
Logan, F. A.....Niagara Falls
Lowrie, H. A.....Toronto

Masson, D. M.....Toronto
Miller, W. H.....Barrie

McClintock, J. J.....Lisle
McClure, Miss J. R.....Toronto
McConney, Mrs. F. S.....Toronto
McCormack, W. G.....Toronto
McDonald, G. O.....Lakeside
McGillivray, J. E., Weyburn, Sask.
McIntosh, P. D.....Toronto
McKay, A. L.....Toronto
McLean, A. L.....Toronto

Nelson, E. J.....Guelph
Nunn, J. E.....Landis, Sask.

Palmer, H. I.....Brantford
Palmer, R. E.....Toronto
Pickett, P. E....Twin Falls, Idaho
Powell, W. G.....Stratford
Puffer, D. S.....Toronto

Quinn, H. J.....Colborne

Reid, J. S.....Tillsonburg
Rittinger, F.....Berlin
Robbins, F. C.....Toronto
Rush, J. W.....Toronto
Russell, N. H.....Toronto

Sauder, P.....Markham
Shannon, E. H.....Toronto
Shaver, R. C.....Toronto
Shaw, Miss V. A.....Windsor
Stewart, A. E.,
Mount Hamilton P.O.
Stuart, Miss M. M., Williamstown
Styner, W. B.....Southampton

Urquhart, G. T.....Owen Sound

Verity, L. E.....Brantford

Warner, W. P.....St. Thomas
Wheler, E. G.....Toronto
Willis, H. H.....Newmarket
Wilson, D. B.....Toronto
Wilson, D. G.....Gananoque
Woods, W. E.....Fergus

Fifth Year.

Alexander, W. P. J.....Madoc
Anderson, Miss A. J.....Toronto
Avison, D. B.....Smith's Falls

Battley, J. C. S.....Sarnia
Bell, F. J.....Toronto
Bell, Miss H. Y.....London
Brayley, L. G.....Toronto
Bunt, M. H.....Collingwood

Carleton, E. A.....Roslin
Carter, T. P.....Schomberg
Connell, W. M.....Lucknow
Cornwall, W. D.....Toronto
Cowan, Miss M. L.....Seaforth
Cruikshank, H. C.....Hamilton

Devins, C. J.....Thornbury
Dobson, H. V.....Fordwich
Dowler, V. B.....Fort William

Esser, D.....Toronto
Evelyn, S. J.....Jamaica, B.W.I.

Feick, T. B.....New Hamburg
Forge, F. W.....Moose Jaw, Sask.

Found, N.....Bowmanville
Free, F. de F.....Campbellford

Graef, F. W.....Clifford
Graham, N. F. W.....Toronto

Halliday, D.....Belgrave
Hayes, J. V.....Peterboro
Hewson, R. D.....Red Deer, Alta.
Hill, J. C.....Orillia

Joyce, R. E.....Bronte

Kennedy, Miss C. I. M...Wingham
Kerr, Miss M. G.....Toronto
Kirkup, N. N.....Barrie
Kiteley, Miss E. L.....Bradford

Lane, H. B.....Toronto
Lipsett, H.....Toronto
Locke, F. D.....Edmonton, Alta.
Logie, W. D.....Sarnia

Marvin, Miss B. V.....Belleville
Miller, J. R.....Iroquois
Muir, D.....St. Mary's
Muir, Miss H. M.....Toronto
Mulligan, C. V.....Omemee

McClinton, W. S.....Midland
McGavin, Miss A. P.,
Glasgow, Scotland
McLeod, N. D.....Hawkestone

Neelands, Miss L. G.....Forest

Paterson, R. S.....Blantyre
Pequegnat, L. A.....Kitchener

Spratt, W. L.....Ottawa
Stoll, E. L.....Niagara Falls
Stover, C. B.....Toronto
Tiffin, M. E.....Vancouver, B.C.

Young, C. O.....Toronto

DENTAL STUDENTS.

1918-1919

Abar, H. S.....Campbellford
Adams, H.....Peterborough
Adams, R. B.....Toronto
Agnew, R. G.....Toronto
Akins, S. C.....Arnprior
Anderson, H. R.....Toronto
Armstrong, W. J.....Ottawa
Asselstine, C. W.....Toronto

Barber, Miss I. M.....Ottawa
Barnes, L. V.....Stornoway, Sask.
Barnes, A. F.....London
Beattie, N.....Arnprior
Beckett, R. J.....Brockville
Best, J. H.....Winnipeg, Man.
Black, W. B.....Welland
Bradley, A. O.....Gananoque
Broadworth, R. T.....Madoc
Bryans, H. S.....Toronto
Butler, J. A.....Pembroke

Calbeck, A. G.....Dunnville
Cameron, A. A.....Lucknow
Campbell, E. T.....Rockland
Churchill, S. H.....Toronto
Clark, W. D.....Toronto
Corbett, F. M....Winnipeg, Man.
Coughlin, L. M.....Auten Mills
Coyne, J. T.....Toronto

Dales, A. F.....Drayton
Daly, A.....Iona, P.E.I.
Davidson, B.....Toronto
Derbyshire, A. O.....Westport
Dinniwell, R. E.....Wiarton
Dobbs, E. R.....Lansdowne
Dodds, L. R.....Perth
Donahy, J. A.....Mount Forest
Douglas, N. S.....Woodstock
Duff, J. C.....Inverary

Faulkner, W. J.....Listowel
Foster, B. D.....Harrow
Freitag, H. A.....Eganville

Garfat, E.....Woodstock
Garvey, L. R.....Goderich
Gott, A.....Toronto
Graham, F. M.....Fenelon Falls
Graham, J. M.,
Stoney Mountain, Man.
Granovsky, T. L...Winnipeg, Man.

Haines, C. A.....Meaford
Halladay, G. B.....Athens
Harper, H.....Toronto
Hilliker, A. E.....Galt
Hoar, H. B., Hopewell Cape, N.B.
Hogan, M. J.....Toronto
Holmes, A. S.....Toronto
Howson, G. W.....Wingham
Hunter, W. H.....Barrie
Hyde, R. G.....Dundas

Irwin, J. E.....Toronto

James, C. N.....Carp
Jewitt, G. G.....Wyoming
Johnston, G.....Strathroy
Johnston, R. E.....Toronto
Jones, A. N.....Goderich

Kerr, A. R.....Toronto
Killoran, M. E.....Peterboro
King, J. A.....Elmira
Kinsman, Miss M. A.....Sarnia

Letellier, L. A.....Peterboro
Lumb, R. J. C.....Bancroft

Macdonald, A. B.....Toronto
Marshall, E.....Vars
Marshall, T. R.....Brampton
Martin, L. M.....Ottawa
Millen, G. J.....Toronto
Mills, R. J.....Jasper
Moulson, H.....Saskatoon, Sask.

McAllister, Miss M. R.,
New Westminster, B.C.
McClure, F. D.....Norval
McCool, L. H.....North Bay
McCutcheon, R. C.....Honeywood
McFeetors, H. E.....Copper Cliff
McGowan, J. C.....Hamilton
McIntosh, D. D.....Greenfield
McKee, G. G.....Southampton
McLean, W. F.....Brampton
McLeod, J. M.....Toronto
McLister, J. C.....Toronto
MacMillan, E. A.....Maxville
McMullen, J. E.....Pembroke
McQueen, R. A.....Tillsonburg

Olson, J. O.....Winnipeg, Man.

Partlo, J. M.....Ingersoll
Paul, G. S.....Toronto
Pratt, M. L.....Manotick

Reid, R. G.....Tillsonburg
Robb, W. J.....Ripley
Roberts, J. F.....Toronto
Robinson, R. W. H.....Toronto
Robinson, T. A.....Toronto
Rochon, R.....Ottawa
Rogers, J. L..Summerside, P.E.I.
Rowles, U. E.....Calgary, Alta.
Rowsome, C. M.....Athens
Ryan, L. N.....Bracebridge

Smart, C. C.....Renfrew
Snell, G. H.....Chatham
Sockett, R. J.....Toronto
Spellman, J. A.....Hastings
Stewart, C. G.....Beamsville

Taylor, C. J.....Peterboro
Teiffel, G. W.....Victoria, B.C.

Wagner, G. W.....Renfrew
Warnica, J. F.....Allandale
Warnicker, L. B....Victoria, B.C.
Watson, C. H. D.....Port Hope
Wessels, W. E.....Winnipeg, Man.
Whyte, J. P.....Eganville
Wilkey, W. J.....London
Wilson, C. B.....Toronto
Wilson, P. R.....North Bay
Windrim, H. L.....London
Woods, R. G.....Watford

Zimmerman, J....Winnipeg, Man.

Summary.

First Year Students	257
Second Year Students	182
Third Year Students	124
Fourth Year Students	81
Fifth Year Students	54
Dental Students	122
Occasionals	8
	828

THE

CALENDAR

OF THE

University of Toronto

FACULTY OF MUSIC

1919-1920.

UNIVERSITY OF TORONTO PRESS

THE

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OF THE

University of Toronto

FACULTY OF MUSIC

1919-1920.

UNIVERSITY OF TORONTO PRESS

University of Toronto.

1919-1920.

This pamphlet contains the curricula in Music of the University of Toronto, viz. :

1. Curriculum for Local Examinations in Music.
2. Curriculum for the Diploma of Licentiate in Music.
3. Curriculum for the Degree of Bachelor of Music.
4. Curriculum for the Degree of Doctor of Music.

The University issues certificates to candidates passing any grade of the Local Examinations, in some cases these are necessary qualifications for the Licentiate Examination.

The Local Examination is intended primarily for pupils, the Licentiate Examination for teachers, and the Bachelor's Examination for those who desire to obtain a degree in the University.

All communications regarding the various courses in Music should be addressed to

THE SECRETARY, FACULTY OF MUSIC,
UNIVERSITY OF TORONTO

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University of Toronto.

FACULTY OF MUSIC.

1919-1920.

President. .Sir Robert Alexander Falconer, K.C.M.G., D.Litt., LL.D.

Augustus Stephen Vogt, Mus. Doc.,
Dean.

Herbert Austin Fricker, M.A., Mus. Bac.,
Lecturer on Choral and Orchestral Music.

Albert Ham, Mus. Doc.,
Lecturer on Church Music.

Ferdinand Albert Mouré, Esq.,
University Organist and Lecturer on History of Music.

Healey Willan, Esq.,
Lecturer on Theory of Music.

All communications regarding the various courses in Music should be addressed to

The Secretary,
Faculty of Music,
University of Toronto

ADMINISTRATIVE OFFICERS.

THE UNIVERSITY.

President...Sir Robert Alexander Falconer, K.C.M.G., D.Litt., LL.D.
Registrar.....James Brebner, B.A.
Bursar.....Ferdinand Albert Mouré, Esq.
Librarian.....Hugh Hornby Langton, M.A.
Curator of the Archæological Section of the Museum,
Charles Trick Currelly, M.A.
Physical Director.....James Warren Barton, M.D.
Superintendents of Buildings and Grounds,
Colin Graham Campbell, B.A., M.B., C.M.
Arthur D'Orr Le Pan, B.A.Sc.
Manager of the University of Toronto Press....Richard J. Hamilton, B.A.

FACULTY OF MUSIC.

President..Sir Robert Alexander Falconer, K.C.M.G., D.Litt., LL.D.
Dean.....Augustus Stephen Vogt, Mus. Doc.
Secretary.....Annie Wilkie Patterson, B.A.

CURRICULUM FOR LOCAL EXAMINATIONS IN MUSIC.

The University of Toronto Local Examinations in Music are held annually at specially announced dates within the months of June and December. The examinations in theory will be held in the first week in June and December.

The December Local Examinations in the practical branches will be held in Toronto, and at the discretion of the Senate may be held at other places. Applications for the December examinations must be forwarded to the Secretary of the Faculty not later than the first of November.

The Local Examinations include the Elementary Grade and Teacher's Course in piano, the Primary, Junior and Intermediate grades in the practical branches (piano, organ, voice, violin and violoncello), and the Junior, Intermediate and Senior grades in the Theory of Music.

As necessity arises examinations will be announced in other practical branches.

Various local centres, each under the charge of a local representative, have been established in the different parts of the Dominion. Five candidates in one department are necessary to constitute a local centre.

Applications for local examinations must be forwarded to the Secretary of the Faculty not later than May 9th. The fees for examination and certificate must, in all cases, accompany the candidate's application for examination. The fee for certificate will be returned to unsuccessful candidates.

The names and addresses of candidates should be written on the proper form of application which may be obtained through the local representatives, or upon application to the Secretary of the Faculty.

A list of the successful candidates will be published in the Toronto papers as soon as possible after the examiners have completed their duties.

Candidates in practical subjects are informed that when any particular edition is named, for the purpose of identifying compositions, the use of such edition is not compulsory. The examiners will accept any edition, but candidates are particularly cautioned against presenting wrong pieces, as errors in this respect will invariably result to the disadvantage of the candidate.

The total number of marks necessary to pass in any subject is 60; second class honours, 70; for first class honours, 80; maximum, 100.

In the Intermediate and Senior grades in the Theory of Music, the candidate must obtain 60 per cent. of the marks assigned to Harmony in order to pass.

Candidates in the practical subjects may, if desired, pass at once to any higher examination in the series without first passing the lower grades.

There is no appeal whatever from the decision of the Examiner or Examiners.

Local Centres.	ONTARIO.	Representatives.
Alexandria		Donald MacKay, B.A
Almonte		J. W. Treleaven, B.A.
Amherstburg		Rev. Thomas Nattress, B.A.
Arnprior		A. E. Morrow, B.A.
Aylmer		W. W. Rutherford, B.A..
Barrie		Rev. G. A. Brown, M.A., B.D.
Belleville		Col. W. N. Ponton, M.A.
Bobcaygeon		
Bowmanville		
Brampton		W. J. Fenton, B.A.
Brantford		
Brockville		A. J. Husband, B.A.
Burk's Falls		A. W. Partridge, M.B.
Caledonia		
Cayuga		J. E. Skeele, B.A.
Chatham		
Clinton		
Cobourg		J. W. Odell, B.A.
Collingwood		W. Williams, B.A.
Cornwall		
Deseronto		W. K. T. Smellie, B.A.
Dundas		John Reid, M.A., LL.B
Fergus		
Fort William		T. S. T. Smellie, M.A., M.D.
Galt		T. Carscadden, M.A.
Gananoque		H. W. Irwin, B.A.
Georgetown		
Goderich		
Gravenhurst		
Grimsby		W. Montgomery, B.A.
Guelph		W. Tytler, B.A.
Hamilton		W. H. Ballard, B.A.
Hespeler		A. Ochs, M.B.
Ingersoll		J. L. Paterson, B.A., LL.B.
Kemptville		W. Dillane, B.A.
Kenora		
Kincardine		S. W. Perry, B.A.
Kingston		
Kitchener		
Lakefield		W. A. Baker, M.D.
Lindsay		
Listowel		W. A. Phillips, B.A.
London		J. Dearness, M.A.
Madoc		

Local Centres.	ONTARIO.	Representatives.
Meaford		L. J. Cornwell, B.A.
Midland		F. C. Macdonald, B.A., M.B.
Morrisburg		Adam Johnston, B.A., LL.B.
Mount Forest		
Napanee		Rev. A. L. Howard, Ph.D.
Niagara Falls		
North Bay		
Orangeville		A. Steele, B.A.
Orillia		J. E. Dickson, B.A.
Ottawa		J. Macmillan, B.A.
Owen Sound		
Palmerston		
Paris		W. N. Bell, B.A.
Parry Sound		J. R. Stone, B.A., M.B.
Pembroke		
Perth		W. Hardy, B.A.
Peterborough		
Petrolea		J. J. Bell, B.A.
Picton		M. Currie, B.A., M.B.
Port Arthur		F. H. Keefer, M.A., LL.B.
Port Elgin		F. H. Wells, M.B.
Port Hope		
Prescott		R. C. Rose, B.A.
Ridgetown		J. G. Little, B.A.
Sarnia		
Sault Ste. Marie		L. A. Green, B.A.
Seaforth		
Smith's Falls		S. J. Stubbs, B.A.
Stratford		C. A. Mayberry, B.A., LL.B.
Strathroy		C. S. Kerr, B.A.
Sudbury		J. H. Clary, B.A.
St. Catharines		W. J. Robertson, B.A.
St. Thomas		W. H. Murch, Esq.
Thorold		
Tillsonburg		V. A. Sinclair, B.A., LL.B.
Uxbridge		H. G. Park, B.A., D.Paed.
Vankleek Hill		Rev. L. Conley.
Walkerton		A. E. McNab, B.A.
Waterloo		Rev. J. R. Gilchrist, B.A.
Welland		J. McNiece, B.A.
Whitby		
Windsor		Rev. J. C. Tolmie, B.A.
Woodstock		

BRITISH COLUMBIA.

New Westminster.....A. E. White, Esq.
Victoria.....Rev. J. McCoy, B.A.
Vancouver.....

MANITOBA.

Brandon.....Miss G. E. Fraser.
Winnipeg.....N. B. MacLean, M.A.

ALBERTA.

Calgary.....
Edmonton.....Rev. D. G. McQueen, B.A.

SASKATCHEWAN.

Regina.....D. P. McColl, B.A.

THEORY OF MUSIC.

The Theory Examinations are conducted in three grades:—Junior, Intermediate and Senior. The Faculty have decided not to name any text-books on Harmony and Counterpoint. Intelligible answers will be accepted by the Examiners, regardless of any particular system or theory.

Three hours will be allowed for each paper.

For particulars as to fees, see page 57.

The Junior division paper will embrace questions on notes and rests; key-signatures and time-signatures; intervals and their inversions; treble and bass clefs; major, minor and chromatic scales; meanings of terms and signs in ordinary use; transposition from one key to another, and from treble to bass, or vice versa. No part-writing will be required, but questions will be asked on the construction of the common chord, and the chord of the dominant seventh; and on the inversion of these chords.

The Intermediate division paper will include questions, embracing the subject-matter of the requirements for the Junior division; on transposition into various keys and clefs (including the C clef); intervals and their inversions; triads and their inversions; the dominant and diminished sevenths, and their inversions and resolutions; preparation and resolution of suspensions (including retardations); transcription from short score to open vocal score; the harmonization of a figured bass; cadences; sequences; simple modulation; well-known facts on musical history within the period of 1750-1850.

The Senior division paper will embrace questions on triads (consonant and dissonant); discords of the seventh and ninth (chromatic and diatonic); suspensions; passing discord; the augmented sixth; inversions of all the before-mentioned chords; adding three parts above a figured bass; harmonizing a given melody, or an unfigured bass, in three or four parts; adding one part in the first species of counterpoint to a given canto fermo; adding one part in the second, third, fourth, or fifth species of counterpoint to a given canto fermo; elementary form, including the musical sentence and forms employed in the Sonata; modulation; musical history from 1600 to 1850.

In the Intermediate and Senior grades in the Theory of Music, the candidate must obtain 60 per cent. of the marks assigned to Harmony in order to pass.

The certificate for the Senior division in Theory will not be issued unless the candidate has passed the examination of the Junior division.

The examination in Theory of the first year Bachelor of Music of the University of Toronto will be accepted for any of the Theory of the Local Examinations.

PIANOFORTE.

Elementary Grade.

Candidates will be required to prepare six numbers in all, chosen from the following list of compositions:—

Elementary Piano.

ALDEN, J. C.
The Sandman.

ALETTER, W.
Hunting March.

BARTH, OTTO
In My Garden, op. 15: No. 1, Morning Glory; No. 2, A Romp on the Grass; No. 4, The First Butterfly; No. 5, All Abloom; No. 6, Red Roses; No. 7, Under the Trees; No. 8, March of the Shadows; No. 10, In the Moonlight.

BAUMFELDER, F.
Peasant Dance.

BELLAIRS, R. H.
Six Melodious Pieces: No. 1, The Watersprite; No. 2, The Hunter's Horn; No. 3, The Fairy Ring; No. 4, Day Dreams; No. 5, Moonlight; No. 6, The Windmill.

BERWALD, W.
Valse Coquette.
Hunting Song.

BOHM, C.
Invitation, op. 362, No. 2.

BROWN, ARTHUR L.
Musical Scenes from Pixie Land, op. 16: No. 1, The Pixies' Drill; No. 6, The Pixies' Waltzing; No. 10, The Pixies Asleep.
The Pixies' Carnival, op. 32: No. 1, The Pixies' Waltz Song; No. 2, The Pixies' Prize Song; No. 9, The Pixies' Gavotte; No. 10, The Pixies' Good-Night Song.

BROWN, F. K. SARGENT
Catch me if you can, op. 12, No. 3.
Over Hill, over Dale, op. 12, No. 5.
A Dance in Fairy Glen, op. 12, No. 6.
A quiet Talk, op. 12, No. 4.
Weaving Garlands, op. 12, No. 7.
Good Night, Fairies all, op. 12, No. 8.

CADMAN, C. W.
Dance of the Sunbeams, op. 34, No. 8.
A Day Dream, op. 35, No. 5.
A Country Vacation, op. 37: No. 1, Churning Song; No. 3, The Thresher; No. 4, Noontide Rest; No. 5, Playing in the Hay.

CHADWICK, G. W.
Ten Little Tunes: No. 5, The Little School Bell.

CLEMENTI, M.
Sonatina, op. 36, No. 1 (any two movements).
Sonatina, op. 36, No. 2.
Sonatina, op. 36, No. 3 (last movement).

CONRAD, WM.
Holiday Series: No. 1, May Day Frolics; No. 2, Hallowe'en Revels; No. 3, New Year's Greetings; No. 4, Chimes on Christmas Morn; No. 5, St. Patrick's Day Pranks.

CRAMM, H. L.
Rut-a-tut-tuts, op. 7, No. 6.
Pittypat and Tippytoe, op. 7, No. 7.
Left Foot, Right Foot, op. 12, No. 1.
The Gossips, op. 16, No. 1.
The Rowing Song, op. 16, No. 2.
A Morning Gallop, op. 16, No. 3.

CUI, C.
A la Schumann, op. 20, No. 4.

DEVAUX, J.
The Queen of the Ball, op. 21, No. 6.
Dream Pictures, op. 23: No. 1, Antoinette.

DORN, C.
In the Park.

DUCELLE, PAUL
Musical Memories, op. 16: No. 1, Dancing Stars; No. 2, Lilliputian Parade; No. 3, Little Gazelle; No. 4, Dance of the Dewdrops; No. 5, Souvenir Valse; No. 7, Nita; No. 8, The Sleighride; No. 9, Maybells; No. 10, Hand in Hand; No. 12, Queen of Drowsy-Land.
Alpine Song, op. 27, No. 3.
March of the Guards, op. 20, No. 7.

DUTTON, THEODORA
Five Litttle Stories in Tone, op. 8: No. 1, Rowing Song; No. 2, May Day March; No. 3, The Swaying Bough; No. 4, Little Soldiers.

EIKHART, RUDOLF
Melodious Sketches, op. 15: No. 4, The Merry Lark; No. 7, The Greeting; No. 9. Golden Locks; No. 10, Youth's Happy Day; No. 12, The Forest King.

EILENBERG, R.
Characteristic Dances, op. 26: No. 1, Dance of the Clowns; No. 3, Dance of the Flower Girls; No. 4, Dance of the Hunters.
Ten Tone Pictures, op. 19: No. 1, Hide and Seek; No. 2, Merry-Go-Round; No. 3, Merry Kate; No. 6, Hazel's Dance.
Six Silhouettes, op. 23: No. 1, Pleasant Memories.
Ten Recreations, op. 25: No. 4, Serenade.
Humoreske, op. 27, No. 5.

ENGLEMANN, H.
Nocturne, op. 562, No. 3.

FARRAR, F. E.
A June Morning.
The Trumpet Calls.
In the Sunlight.

GAEL, H. VAN.
The Whirlwind.

GRANT-SCHAEFER, G. A.
On the Water.

GURLITT, CORNELIUS
Petite Valse in A flat, op. 62, No. 11.

HELLER, STEPHEN
L'Avalanche, op. 45, No. 2.

KERN, C. W.
Flowers of the Valley, op. 41: No. 3, Bluebells; No. 4, Feather Roses; No. 5, Lady's Slipper; No. 6, Jack-in-the-Pulpit.

KNAEBEL, A. M.
Two Little Faries, op. 20, No. 3.

KROGMANN, C. W.
Five Note Fancies op. 78; No. 4, Bandit March; No. 5, Cradle Song; No. 6, The Water Wheel; No. 7, The Little Regiment: No. 8, Gipsy Dance; No. 9, Rondolette; No. 10, Forest Breezes.
Ten Musical Bon Bons, op. 10: No. 2, Barcarolle; No. 8, In Slumberland; No. 9, Christmas Dance; No. 11, Grazulla Menuet.
A Wreath of Melody, op. 35: No. 11, The Skating Carnival.
Revels in Tone Land, op. 45; No. 5, Fairy Whispers; No. 8, Angels' Lullaby; No. 11, Rustic Festival.

KUESSNER, A.
When Daisies Sleep, op. 11.
Moon-Moths op. 2 (any one).

KUHLAU,
Sonatina, op. 20, No. 1.
Sonatina, op. 55, No. 1.

LAER, C. E. VAN
The Chase.

LEE, C. R.
Tarantella in G.

LENACKE MAX
Happy Maytime, op. 19, No. 2.
Springtime Dance, op. 19, No. 4.

MARTIN, GEORGE DUDLEY
At the Fountain.

McINTYRE, E. V.
The Cello Player, op. 12, No. 5.

NICKERSON, F. A.
Arbutus Waltz.

OEHMLER, LEO
Clown Parade, op. 175, No. 1.
Hare and the Tortoise Race, op. 178.
Sleep, Darling, Sleep.

OESTEN, T.
Doll's Dream, op. 202, No. 4.

ORTH, L. E.
In the Hammock, op. 2, No. 1.
The Merry-Go-Round, op. 6, Book I; Nos. 1, 2, 3, 4, 5, 7, 9; any two.

OTTO, E.
Whirling.

PENNINGTON, L. B.
Village Dance, op. 10, No. 1.
Gipsy Dance, op. 10, No. 3.

POLDINI, E.
Twelve Little Fantasie.
Divertissements: No. 1, Valse des Souriceaux.

QUIGLEY, L. G.
Swaying Ferns, op. 121, No. 5.

REGER, CARL
Barcarolle, op. 15, No. 2.
March in C, op. 15, No. 10.
March in F, op. 19, No. 10.
10 Little Leaves, op. 19: No. 2, Pastoral; No. 3, Minuet.

REINECKE, CARL
Mazurka in A minor.

ROGERS, JAMES H.
Toy-Shop Sketches (any two).

ROHDE, E.
Stray Leaves, Book I: No. 6, First Violets.

SABATHIL, F.
A Merry Dance, op. 234, No. 4.

SARTORIO, A.
Six Recreations, op. 34: No. 2, Happy Outing.
Six Recreations, op. 269: No. 2, The Happy Hunter; No. 5, Little Flyaway.
Six Melodious Recreations, op. 274: No. 2, Country Dance; No. 3, In the Twilight; No. 4, Happy Youth.
A Little Story, op. 452, No. 9.
Twelve Flower Pieces, op. 721; No. 9, Snowdrop.

SCHOTTE, LUDWIG
The Postillion.

SCHMITT, SUSAN
Very Happy.
Alla Turca.

SCHUMANN,
"Album for the Young," Nos. 1 to 5.

SJOEGREN, E.
Elegie, op. 41, No. 1.

SLATER, DAVID DICK
Fairy Dance.

SPINDLER, FRITZ
The Chase, op. 123, No. 7.
Cossacks' Dance, op. 249, No. 7.

SPAULDING, GEORGE
Seven Easy Pieces: No. 1, Base Ball; No. 3, My Fair Lady; No. 6, Young Braves; No. 7, Young Shepherdess.

STOUGHTON, R. S.
Hide and Seek.
On the Lake.

TELLIER, A.
An Autumn Dream.
An Autumn Legend.
Ten Little Pieces, op. 14: No. 1, An Evening Story; No. 3, The Enchantress; No. 7, Return of the Reapers; No. 8, From Flower to Flower; No. 9, Francesca.

THOMPSON, R. G.
Once Upon a Time, op. 2, No. 3.

TSCHAIKOWSKY, P. I.
Maman, op. 39, No. 4.
Italian Song, op. 39, No. 15.

WARREN, A. E.
Gratefulness, op. 72, No. 7.
Lullaby, op. 72, No. 8.

WERNER, MAX
Six Musical Gleanings, op. 10, No. 4; Sunshine and Shadow.
Six Melodious Pieces, op. 18: No. 2, In the Quiet Hour; No. 4, Sweet Thoughts; No. 5, Dance of the Nymphs; No. 6, Dancing Sunbeams.

WILLIAMS, F. A.
In the Swing, op. 69, No. 2.

WILKS, ROBERT W.
Six Characteristic Sketches, op. 2: No. 1, Sweet Remembrance; No. 2, Lads and Lassies.

WOLFF, B.
Thirteen Easy Recreations, op. 187; No. 3, Hunter in the Wood; No. 6, Country Dance.
Twelve Melodious Recreations, op. 190: No. 2, Playfulness; No. 6, Song without Words; No. 10, Tenderness.

ZACH, MAX
Minuet in G.

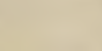
If preferred, one or more Primary numbers may be selected, one Primary number being accepted in lieu of one Elementary number.

Elementary Piano.

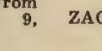
Technical Tests, etc., in Elementary Piano Examinations.

Candidates must be prepared to play, with accurate fingering and from memory, the following technical exercises:—

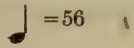
SCALES.—All major scales, hands separately, in quarter notes, compass four octaves, metronome,



CHORDS.—Major, triad, and four note forms, with inversions, solid and broken, hands separately, in all keys indicated under the heading of scales. The solid chords to be played in whole notes, and the broken chords in quarter notes, compass two octaves, metronome,



OCTAVES.—Staccato octaves in all keys indicated under the heading of scales, in quarter notes, hands separately, compass two octaves, metronome,



Candidates whose hands are too small to stretch the octave, may substitute double sixths, using the first and fifth fingers.

EAR TEST.—Candidates will be required to sing without accompaniment a major scale, or, if unable to sing, will be expected to recognize errors, if any, in the scale as played by the examiner (the candidate not to see the keyboard).

The metronome will be used in connection with the technical tests at the Elementary Piano Examination.

Elementary Piano Certificate.

Successful candidates in the Elementary Piano Examination will receive the Elementary Piano Certificate of the University.

For particulars as to fees, see page 57.

Marks are awarded under the following heads in the Elementary Piano Examination:—

	MAXIMUM
Scales,	8
Chords and octaves,	8
Accuracy of fingering and notation,	17
Phrasing and interpretation,	20
Quality of touch,	16
Choice and steadiness of tempo,	12
Use of pedals,	8
Ear test,	5
Memory playing,	6

PIANOFORTE.

Primary Grade.

Candidates will be required to prepare eight numbers in all, chosen from the following list of compositions, one of which must be by Bach, and one by Beethoven—the candidate to be allowed freedom of choice in the remaining six pieces:—

Primary Piano.

ALETTER, W.
Melodia in F.
Sweet Message.

ALKAN, CHARLES VALANTIN
Prelude in B major, op. 31, No. 8.

AMBROISE, PAUL
Chant du Soir.

ARNE,
Sonata in A. (Schott, publisher)

BACH, J. S.
Twelve Little Preludes (Peters' edition, vol. 200; Ed. Wood, No. 238; or Schirmer's Library, No. 15), Nos. 1, 2 and 3; 4 and 5; 6, 7 and 8; 9 and 10.
Six Little Preludes (Peters' edition, vol. 200; Ed. Wood, No. 238; or Schirmer's Library, No. 15), any two.
Twenty Easy Pieces (Peters' edition, vol 1959), 1, 2 and 3; 4 and 5; 6, 8 and 10; 15, 16 and 20.
Bourrée in A minor and A major, (from English suite).

BACH, PH. E.
Rondo in E minor.

BACHMANN, G.
The Grasshopper.

BAUMFELDER, F.
Bonne Humeur, op. 274.

BEETHOVEN, L. Van
Sonatinas in C. G. F. Any one.
Variations in F on a Swiss Air.
Six Variations in G on "Nel cor più".
Seven Bagatelles, op. 33, No. 1 in E flat; No. 2 in C; No. 4 in A; No. 6 in D; any one.

BEHR, FRANZ.
Bluette (The Pearl).

BELLAIRS, R. H.
Liebesgruss.

BIRD, A.
Sketch, op. 15, Nos. 1, 2, 3; any one.

BOHM, C.
The Fountain.
Give me thy Heart, op. 266.

BORODIN, A.
Nocturne, G flat.

BOROWSKI, F.
Valse Champêtre.
Album Lyrique, Nos. 1 and 2.
Album Lyrique, No. 5.

BREWER, A. HERBERT
The Fairy Pipers (Arranged by Clarence Lucas).

BREWER, HERBERT
Auf Wiedersehen (Novello's edition).

BROCKWAY, HOWARD
Evening Song, op. 26, No. 4.

BRUELL, F.
Gavotte, op. 47, No. 1.
Mazurka, op. 69, No. 2.

CARSE, A. VON AHN
Gavotte in G (Novello's edition).

CHAMINADE, C.
Album des enfants, op. 123, Nos. 2, 4 and 5; 7, 8 and 9; 10, 11 and 12.

CLEMENTI, M.
Sonatinas, op. 36: No. 2 in G; No. 3 in C; No. 5 in G; No. 6 in D; any one.

CRAMER, P.
Four Sonatinas, op. 6; any one.

CUI, C.
Canzonetta.
Bagatelle Italienne.

DELIBES, LEO
Pizzicati (from Sylvia Ballet).
Passepied, No. 6; Dances in the Old Style.

DELLAFIELD, HENRY
Petite Valse de Concert, op 62, No. 14.

DIABELLI, ANT.
Four Sonatinas, op. 151; any one.
Four Sonatinas, op. 20; any one.

DOERING, C. H.
Six Easy Characteristic Studies, op. 209; any two.

DUCELLE, PAUL
Queen of Roses, op. 20, No. 6.

DURAND, A.
Chaconne in A minor, op. 62.
Valse in E flat.

DUSSEK, J. L.
Rondo in D, La Matinée.
Rondo in E flat, Le Garçon Laboureur.

ECKHARDT, RUDOLF
Spring's Serenade, op. 18.

FOERSTER, ALBAN
Three Sonatinas, op. 42; any one.
Melody, op. 104, No. 1.

FLAGNY, A.
Rondo (Schott, publisher).

GABRIEL-MARIE,
La Cinquantaine.
Badinage.

GADE, NIELS
Five Christmas Pieces, op. 36; any two.

GREGH, L.
Pastorale (Return of the Reapers), op. 13.

GRIEG, ED.
Lyrische Stücke, op. 12: any three.
Lyrische Stücke, op. 71, Nos. 6 and 7.

GURLITT, CORNELIUS
Flying Leaves, op. 112, Nos. 1 and 3; 7 and 9; 8.

HARDY, EDMUND.
Two Little Songs without Words, Nos. 1 and 2.
To Daffodils (Tone Poem).

HAYDN, J.
Sonata in C (Peters' edition, vol. 713 A); Ed. Wood 752; No. 5. Any two movements.

HENSELT, A.
Romance de Thal.

HITZ, F.
Pastorale in C major.

HOLBROOKE, JOS.
Souvenir de Printemps. (Novello's edition).

HOLLAENDER, V.
Canzonetta.

HORVATH, GEZA.
Sonatina in D minor, op. 108 (Breitkopf & Hartel ed.).
Dance Italienne, op. 63, No. 1.

HUENTEN, F.
Rondoletto, C major, op. 15.
Introduction and Rondo, op. 78, No. 1.

HUMMEL, J. N.
Rondo in C, op. 52.

JADASSOHN, S.
Spring Song, op. 93.

JENSEN, A.
Happy Wanderer, in A flat.
The Mill, op. 17, No. 3.

JUNGMANN, A.
Will-o'-the-Wisp, op. 217, No. 3.

KARGANOFF, G.
Romance, op. 20, No. 9.
Berceuse, op. 20, No. 11.

KJERULF, H.
Berceuse, D flat, op. 12, No. 5.

KUHLAU,
Sonatina, op. 20, No. 2.
Sonatina, op. 20, No. 3.
Sonatina, op. 55, No. 2.

KULLAK, TH.
Kinderleben, op. 62; any three.

KUESSNER, ALBERT
"Moon-Moths." op. 2; any one.

LACK, T.
Cabaletta, op. 83.
Arietta, op. 97.

LANGE, GUSTAV
Six Characteristic Pieces, any two.

LEO, LEONARDO
Arietta in G minor (Legnick ed.).

LYON, JAMES
Novelette.
Autumn (Novello's ed.).

MACDOWELL, E.
Romanza, op. 39.
Clair de Lune, op. 37, No. 1.
Arabeske.

MANNS, OTTO
A Northern Cradle Song (Novello's ed.).

MARMONTEL, ANTONIN
In the Forest.

MASSENET, J.
Mélodie, op. 10.

MENDELSSOHN,
Gondellied in A.

MERKEL, G.
Wanderer's Song, op. 18, No. 2.
Impromptu, op 18, No. 3.

MEYER, A.
Mazurka, Caprice, No. 2.
At Evening, No. 3.

MEYER, CHAS.
Barcarolle, op. 121, No. 7.

MEYER-HELMUND,
Chanson d'amour.
Serenade de Pierrot.

MOORE, GRAHAM P.
La Tzigane.
Légende slave, op. 28, No. 1.

MOSZKOWSKI,
Mélodie, op. 18.
Tema, op. 10, No. 2.
Rêverie, op. 15, No. 2.
Miniatures, op. 28, No. 1.
Valse Mignonne, op. 89, No. 2.

MOZART,
Sonata No. 1 in C major; any two movements (Schirmer, vol. 65).

NOELCK, AUG.
Gavotte Tendre, op. 137.
Valse Elegante.

PACHER,
Swiss Folk Song, op. 69, No. 3.

PIECZONKA, A.
Tarantella in A minor.

PIERNE, G.
Cradle Song in A.
Valse in A.

RAFF, J.
Romance, op. 2, No. 2.

RAVINA, H.
Petit Bolero, op. 62.

REINECKE, C.
Sonatina in C, op. 127 A, No. 1.
Sonatina in F, op. 127 A, No. 3.
Miniature Sonata in F, op. 136, No. 3.

SAINT-SAENS,
Romance sans Paroles.

SARTORIO, A.
Murmuring Brooklet, op. 450.
At Evening, op. 270.
Spring's Greeting.

SCHARWENKA, PH.
Hinaus ins Freie, op. 34, No. 2.
Soldaten-Marsch, op. 34, No. 5.
Capriccietto, op. 45, No. 3.
Scherzino, op. 45, No. 7.
Tarantelle, op. 45, No. 8.
Menuett, op. 58, No. 6.

SCARLATTI, D.
Tempo di Ballo in D.

SCHUBERT, FR.
Waltzes, op. 9, Nos. 1, 2 and 3.

SCHUETT, E.
Canzonetta in D major.

SCHYTTE, LUDWIG
Berceuse, op. 26, No. 7.
Evening Bells, op. 84, No. 5.

SIMON, ERNST
Squirrel's Frolic.

STRELEZKI, ANTON
Menuet à l'antique in E flat.

TSCHAIKOWSKI, P.
Chanson Triste.
Jugend Album, op. 39, Nos. 1, 2 and 3; 4, 11 and 12; 20 and 21; 22, 23 and 24.

VINCENT, RUTH
Once Again, op. 33.

VOLKMANN, R.
Grandmother's Songs, op. 27: Nos. 1 and 2: 6 and 7; 4, 5 and 8 (Augener edition).

WACHS, P.
Caprice Bohémien.
Chanson du Soir.
Joyeux Carillon.

WESTOBY, F. D.
Consolation (Melody in D).

WILM, NICOLAI VON
Le Carnival de Nice, op. 201, Nos. 1, 2, 3, 4, 5; any two.
Souvenir op. 107, No. 4.

WOLSTENHOLME, W.
Chanson Triste.
Allegretto in E flat.

Primary Piano.

Technical Tests, etc., in Primary Piano Examinations.

Candidates must be prepared to play, with accurate fingering and from memory, the following technical exercises:—

SCALES.—All major, harmonic, minor, and chromatic scales, legato and staccato, hands separately, four octaves, in quarter notes, metronome,

♩ =120

CHORDS.—Major and minor triads and chords in four note form, and dominant seventh chords, with inversions, hands separately—solid and broken. Broken chords to be played in quarter notes and solid chords in half notes.

Broken chords, in the four note form, may be substituted for solid chords in the case of small hands.

OCTAVES.—Staccato octaves, in quarter notes, on any required scale, hands separately.

ARPEGGIOS.—Arpeggios of all major and minor common chords, compass four octaves, fundamental position, hands separately, quarter notes.

SIGHT PLAYING.—Candidates will be required to play at sight an easy piece.

EAR TEST.—Candidates will be required to sing without accompaniment a major scale, or, if unable to sing, will be expected to recognize errors, if any, in the scale as played by the examiner (the candidate not to see the keyboard). Candidates will also be tested in the intervals of major thirds, perfect fifths and octaves.

The metronome will be used in connection with the technical tests at the Primary Piano Examination.

Primary Piano Certificate.

Successful candidates in the Primary Piano Examination will receive the Primary Piano Certificate of the University.

For particulars as to fees, see page 57.

Marks are awarded under the following heads in the Primary Piano Examination:—

	MAXIMUM
Scales,	8
Chords and octaves,	8
Accuracy of fingering, notation, etc.,	15
Phrasing and interpretation,	18
Quality of touch,	15
Choice and steadiness of tempo,	10
Use of pedals,	8
Sight reading,	5
Ear test,	5
Memory playing,	8

Junior Grade.

Candidates will prepare eight numbers selected from the following list of compositions, one of which must be by Bach, one by either Haydn, Mozart or Beethoven, and one by Chopin—the candidate to be allowed freedom of choice in the remaining five numbers:—

Junior Piano.

ABELLE, VICTOR
Tarantelle, op. 19.

BACH, FRIEDEMANN
Capriccio in D minor.

BACH, J. S.
Fifteen Two Part Inventions (Peters' edition, vol. 201, Ed. Wood, 126; Schirmer Library, No. 813), 1 and 8; 3 and 4; any one of remaining numbers.
Six short Fugues, No. 3; No. 4; No. 5 (Peters' edition, vol. 200, Ed. Wood, 238; Schirmer Library, No. 15).
Fantasia in G Minor (Peters' edition, vol. 215).
Prelude and Fugetta in D minor, No. 6 (Peters' edition, vol. 200, Ed. Wood, 238; Schirmer Library, No. 15).
Prelude and Fugetta in E minor, No. 7 (Peters' edition, vol. 200, Ed. Wood, 238; Schirmer Library, No. 15).

BACH, PH. EM.
Rondo Andantino, B minor (Schirmer).

BACHMANN, G.
La Capricieuse (The Coquette).

BEETHOVEN, L. VAN
Rondo in C major, op. 51, No. 1.
Rondo in A.
Sonata in G minor, op. 49, No. 1.
Sonata in G, op. 49, No. 2.
Bagatelles, op. 119, Nos. 1 and 2; 5 and 6; 9 and 11.
Bagatelles, op. 126, No. 2; No. 3; Nos. 5 and 6.

BOHM, CARL
Maybells, op. 135.
Frolic of the Butterflies, op. 282.
Hunter's Greeting, op. 309.

BORCH, GASTON
Deux Romances sans Paroles, D flat, op. 67, No. 1; No. 2.

BOROWSKI, F.
La Capricieuse.
Serenata.
Minuet in G.

CARSE, A. VON AHN
Valse (No. 2 in B flat).

CHAMINADE, C.
Pièce Romantique, op. 9, No. 1 and Gavotte, op. 9, No. 2.
Pierrette, op. 41.
Ritornelle, op. 83.
Air de Ballet, op. 30.

CHOPIN, FR.
Valse in F, op. 34, No. 3.
Valse in A flat, op. 69, No. 1.
Valse in B minor, op. 69, No. 2.
Mazurka in A minor, op. 7, No. 2.
Mazurka in B minor, op. 30, No. 2.
Nocturne in E flat, op. 9, No. 2.
Nocturne in G minor, op. 37, No. 1.

COENEN, WILLIAM
Melody in E flat and In Springtime (Novello's edition).

COLERIDGE-TAYLOR, S.
Intermezzo and Eastern Dance (From Nero Suite).
Two Impromptus for the Pianoforte (either one).

DAVIDOFF (REINECKE),
Romance sans Paroles, op. 23.

DELLAFIELD, HENRY
Spanish Fantasie, op. 64, No. 16.
Petite Polonaise de Concert, op. 67, No. 19.

DOLMETSCH, VICTOR
Musette in A minor, op. 105 (Durand and Sons' ed.).

DUCELLE, PAUL
At the Fountain, op. 18.

DULAY, VICTOR
Valse Tzigane, op. 20, No. 2.
Air de Ballet, op. 21.

DURAND, AUG.
2nd Valse, op. 86.

DUSSEK, J. L.
Rondo in B flat (Les Adieux).
Rondo in F (La Chasse).

DVORAK, ANTON
Polka, op. 39, No. 2.
Menuett, op. 39, No. 3.
Romance, op. 39, No. 4.

FIELD, JOHN
Nocturne in E flat, No. 1.
Nocturne in B flat, No. 5.

FORSYTH, W. O.
Even Song, op. 14, No. 3.
In the Twilight, op. 31, No. 1.
Two Picturesque Valses, op. 29, (either one).

GAUTIER, LEONARD
Frills and Flounces.

GODARD, BEN.
Canzonetta, op. 35, No. 3.
Au Matin, op. 83.
Gigue, op. 103.
Renouveau.

GOTTISCHALK, L. M.
L'Etincelle (The Spark).

GRANADOS, E.
Danzes Espagnoles, vol. I. and II.; any two of the six dances.

GRIEG, ED.
Elegische Melodien, op. 34.
Lyrische Stücke, op. 38, any two.
Lyrische Stücke, op. 68, Nos. 1, 2 and 4; 3 and 5; No. 6.

HANDEL, G. F.
The Harmonious Blacksmith (from Suite V.).
Suites Nos. 11, 12, 15, 16; any one.
Fantasia in C.
Fuguettas, any two.

HARDY, EDMUND
Gathering Rosebuds.

HAYDN, JOS.
Gipsy Rondo.
Arietta con Variazioni in E flat (Peters' ed., vol. 484).
Thema con Variazioni in C (Peters' ed., vol. 484).
Sonata in E minor, No. 2, last two movements (Peters' ed., vol. 713 A, Ed. Wood, 752).
Sonata in E flat, No. 3, any two movements (Peters' ed., vol. 713 A, Ed. Wood, 752).
Sonata in D, No. 7 any two movements (Peters' ed., vol. 713 A, Ed. Wood, 752).

HELLER, STEPHEN
Etudes, op. 45 and 46; any two.
Tarantelle in A flat, op. 85, No. 2.

JADASSOHN, S.
Improvisation, op. 48, No. 2.
Remembrance (Album Leaves), op. 71, No. 6.

JENSEN, A.
Wanderbilder, op. 17, Nos. 1 and 2; 7 and 8; No. 9.
Berceuse, op. 12 (Augener's ed.).

JENSEN-NIEMANN,
Murmuring Zephyrs.

KROGMANN, C. W.
Ride of the Storm Witches, op. 46.
The Fireflies' Carnival, op. 49, No. 4
Fetes des Fleurs, op. 80.

KUESSNER, ALBERT
Dance of the Wood Nymphs.

LISZT, FR.
Consolation, No. 3, in D flat major.
Consolation, Nos. 1 and 4.

LOETZ, PAUL DE
Caprice Etude.

LUCAS, CLARENCE
The Moon of Omar, op. 52.

MACDOWELL, ED.
Woodland Sketches, Nos. 1 and 6.
Humereske, op. 28, No. 1.
The Eagle, op. 32, and
The Brook, op. 32.
Sea Pieces, op. 55, Nos. 1 and 2, 6 and 7.
Idyllen, op. 28, any two.

MACFARREN, WALTER
Rondino Grazioso.
Romance (Mariana).

MACKENZIE, A. C.
Rustic Scenes, op. 9, any two (Augener's ed.).

MENDELSSOHN, F.
Kinderstücke, op. 72, Nos. 1 and 2; 3 and 4; No. 5; No. 6.
Songs without Words, Nos. 2, 4, 6, 12, 16, 18, 19, 29, 33, 35; any two.

MERCADANTE, GAETANO
Doll Dance.

MERKEL, G.
Polonaise in A, op. 28.
Tarantella in A minor, op. 92.

MEYER-HELMUND,
Nocturne in G flat major.
Arabesque in B major.

MOSZKOWSKI, M.
Musical Moments, op. 7, No. 1.
Serenata, op. 15, No. 1.
Romance, op. 81, No. 5.
Melodie in G Flat, op. 10, No. 1.

MOZART, W. A.
Fantasia in D minor.
Rondo in D.
Variations in A, No. 16 (Peters' ed., vol. 273).
Sonata in F, No. 5 (Peters' ed., vol. 485, Ed. Wood, 800, No. 2; Schirmer Library, No. 65).
Sonata in C, No. 15, last two movements (Peters' edition, vol. 485, Ed. Wood, 800, No. 6; Schirmer Library, No. 65).

NEVIN, ETHELBERT
A Sketch Book, op. 2, any two.
A Day in Venice, op. 25, Nos. 3 and 4.

PADEREWSKI, I. J.
Mélodie, op. 8, No. 3.
Chant sans Paroles.
Minuet, op. 14, No. 1.
Minuet, op. 16, No. 7.

PARADIES, P. D.
Toccatta.

PESSE, MAURICE
2, 3, 4 me. Valse—Impromptu, any one.

PUGNO, RAOUL
Serenade à la Lune.

RAFF, J.
Suite de Morceaux, op. 75, Nos. 1, 3, 6, 10, any one.
Ranz des Vaches.

RAMEAU,
Gavotte (Le Tambourin).

RUBINSTEIN, ANT.
Polka, op. 82, No. 7.
Mélodie in F.

SAINT-SAENS, C.
First Mazurka, op. 21.
Gavotte in C minor, op. 25.

SAPELNIKOFF, W.
Second Gavotte, op. 5, No. 2.

SCARLATTI-TAUSIG,
Pastorale in E minor.
Capriccio in E.

SCHARWENKA, X.
Polish Dance, E flat minor.
A Souvenir, op. 68, No. 3.

SCOTT, CYRIL
Valse Caprice.

SCHUBERT, FR.
Impromptu in E flat, op. 90, No. 2.
Impromptu in G major, op. 90, No. 3.
Impromptu in A flat, op. 90, No. 4.
Moments Musicals, op. 94, No. 2 in A flat.
Moments Musicals, op. 94, No. 1 in C.
Impromptu in A flat, op. 142, No. 2.

SCHUMANN, R.
Forest Scenes, op. 82, Nos. 1 and 2.
Album for the Young, op. 68, Nos. 6, 7, 8, and 9; 22 and 23; 28 and 30.
Kinder Sonata in G, op. 118, 1st and 2nd movements; 2nd and 3rd movements.
Nocturne, op. 23, No. 4.

SCHUETT, ED.
Valse lente, op. 17, No. 2.
Humoresque, op 20, No. 1.
Chanson Triste, op. 20, No. 4.
Cantique d'Amour, op. 30, No. 6.
Rêverie, op. 34, No. 5.
Deux Moments, op. 76, any one.

SCHYTTE, L.
Rhapsody.

SGAMBATI, G.
Intermezzo, op. 21, No. 4.

STAVENHAGEN, B.
Caprice in B minor, op. 2, No. 3.
Pastorale, op. 2, No. 2.

THOME, F.
La Sirene.

TSCHAIKOWSKI,
Barcarolle, "June," op. 37.
Nocturne, op. 10, No. 1.
Danse Russe, op. 40, No. 10.
Song without Words, op. 2, No. 3.

WACHS, PAUL
Capricante.
Valse Legere.

WELSMAN, F. S.
Minuet in A.

WHEELDON, H. A.
Chant d'Amour.

WOLLENHAUPT,
Morceau en forme d'Etude, in A flat major.

WOYCKE, EUGEN.
Première Tarantelle, op. 56, No. 8.

Technical Tests, etc., in Junior Piano Examinations.

Candidates must be prepared to play, with accurate fingering and from memory, the following technical tests:—

SCALES.—All major, minor (harmonic and melodic) and chromatic scales, in quarter and eighth notes, legato, compass four octaves:—

♩ =100, hands together.

Major scales, staccato, hands separately in quarter notes only.

CHORDS.—All major and minor common chords, solid and broken, in triad and four note forms, with inversions as may be required by examiner; dominant sevenths and diminished seventh chords, with inversions, four note form, hands together. Solid chords to be played in half notes and the broken chords in quarter and eighth notes.

=126

ARPEGGIOS.—Arpeggios of common chord, and dominant and diminished seventh chords, compass four octaves, with inversions, in quarter and eighth notes.

=132, hands separately.

OCTAVES.—Staccato and legato, in any required scale, hands together, staccato in quarter and eighths, legato in quarter notes.

=112.

EAR TESTS.—Candidates will be prepared to sing a major scale, without accompaniment, and will be tested in the intervals of a major third, a perfect octave, a perfect fourth, a perfect fifth, and a major sixth. Candidates who may be unable to sing will be required to recognize the same intervals when played by the examiner (the candidate not to see the keyboard).

SIGHT READING.—Candidates will also be tested in sight playing.

The metronome will be used in connection with the technical tests at the Junior Piano Examination.

Successful candidates in the Junior Piano Examination will, upon passing the Junior Theory Examination, be awarded the Junior Piano Certificate of the University.

For particulars as to fees, see page 57.

Marks are awarded under the following heads in the Junior Piano Examination:—

	MAXIMUM
Scales,	8
Chords and arpeggios,	8
Octaves,	4
Accuracy of fingering, notation, etc.,	12
Phrasing, accent, etc.,	10
Use of pedals,	8
Conception and interpretation,	12
Quality of touch,	10
Choice and steadiness of tempo,	10
Sight reading,	5
Memory playing,	8
Ear test,	5

Intermediate Grade.

Candidates will prepare eight numbers selected from the following list of compositions, one of which must be by Bach, one by Beethoven, and one by Chopin—the candidate to be allowed freedom of choice in the remaining five numbers. One of the eight numbers must be prepared by the candidate without the aid of the teacher.

Intermediate Piano.

ARENSKY,
An der Quelle; Basso Ostinato.
Valse, E flat major, op. 36.
Etude, F sharp major, op. 36.
Prelude in F minor.

BACH, J. S.
Three Part Inventions (Peters' edition, vol. 201, Ed. Wood, 127; Schirmer Library, No. 813). Nos. 1, 2; 3, 4; 5, 6; 7, 8; 9, 10, 11; 12, 13; 14, 15.
Fantasia in C minor (Peters' edition, vol. 207; Ed. Wood, 127; Schirmer Library, No. 22).
Well-Tempered Clavier, Vol. I.
Prelude and Fugue in C major No. 1.
Prelude and Fugue in C minor, No. 2.
Prelude and Fugue in D major, No. 5.
Prelude and Fugue in E minor, No. 10.
Prelude and Fugue in F major, No. 11.
Prelude and Fugue in G minor, No. 16.
Prelude and Fugue in A major, No. 19.
Well-Tempered Clavier, Vol. II.
Prelude and Fugue in C Minor, No. 2.
Prelude and Fugue in E major, No. 9.
Prelude and Fugue in G major, No. 15.

BALAKIREW, M.
Impromptu on themes from two Chopin Preludes.

BEETHOVEN, L. VAN
Sonata, op. 14, No. 1 (complete).
Rondo a capriccio, op. 129.
Sonata, op. 13 (last two movements).
Sonata, op. 14, No. 2 (complete).
Sonata, op. 79 (complete).
Rondo in G, op. 51, No. 2.
9 Variations in A (Quanto e bello l'amor).

BOWEN, YORK
Nocturne (from Miniature Suite). Avision ed.

BRAHMS, J.
Ballade, op. 10, No. 1.
Ballade, op. 10, No. 2.
Fantasies, op. 116, Nos. 4 and 5; 6 and 7.
Rhapsodie in E flat, op. 119, No. 4.

BRASSIN,
Nocturne in G flat major, op. 17.

CHOPIN, FR.
Valse in A flat, op. 34, No. 1.
Valse in A flat, op. 42.
Valse in C sharp minor, with Etude in A flat (posthumous).
Mazurkas, op. 7, Nos. 3, 4 and 5.
Mazurkas, op. 24, Nos. 3 and 4.
Mazurkas, op. 33, Nos. 3 and 4.
Mazurkas, op. 41, Nos. 1 and 2.
Polonaise in C sharp minor, op. 26, No. 1.
Polonaise in C minor, op. 40, No. 2.
Polonaise in B flat, op. 71, No. 2.
Nocturne in B, op. 9, No. 2.
Nocturne in F, op. 15, No. 1.
Nocturne in F sharp, op. 15, No. 2.
Impromptu, op. 29.
Impromptu in G flat, op. 51.

DEBUSSY, CLAUDE
Deux Arabesques (either one).

DENNEE, CHARLES
Springtime in the Forest, op. 34.

DOEHLER, TH.
Tarantelle, G minor.

DUSSEK, J. L.
Sonata in D, op. 9, No. 3.
Sonata in A, op. 43.

FORGEUS, EMIL
Etude de Concert, op. 15.

FORSYTH, W. O.
Poème d'Amour, op. 31, No. 2.
By the Sea, op. 28.
Song of the South Wind, op. 21, No. 1.

FRIML, R.
Valse Poetique, op. 13.
L'Aurore, op. 36, No. 1 and
Réveil du Printemps, op. 32.
Staccato Caprice, op. 39.
The Spirit of the Woods.

GLAZOUNOW, A.
La Nuit, Etude, op. 31, No. 3.

GLINKA-BALAKIREW,
The Lark.

GRIEG, ED.
Romance, op. 51, for two pianos (either piano part).
Menuett, op. 67.
Lyrische Stücke, op. 43, any five.
Lyrische Stücke, op. 54, any three.
Lyrische Stücke, op. 71, Nos. 5, 6 and 7.

HANDEL, G. F.
Suites, Nos. 4; 9; 14.

HAYDN, JOS.
Andante Varie in F minor (Peters' ed., vol. 484).
Sonata in E minor, No. 2 (Peters' ed., vol. 713A; Ed. Wood, 752).
Sonata in A flat, No. 8 (Peters' ed., vol. 713A; Ed. Wood, 752).

HELLER, STEPHEN
La Chasse, E flat, op 29.

HENSELT, AD.
Si oiseau j'étais, op. 2, No. 6.
Spring Song, op. 15.

HOLLAENDER, A.
Marche, op. 39, No. 1.

HUMMEL, N.
La Belle Capriccioso, op. 55.
Rondo (Le Galanté), op. 120.

KARGANOFF, G.
Tarantelle, op. 4.
Valse Caprice, op. 16.

KULLAK, TH.
School of Octave Playing, Part 2, No. 1 and 2; 3 and 4.

LACK, THEO.
Valse Aerienne, op. 159.

LESCHETIZKY, TH.
The two Larks, op. 2, No. 1 and Dance à la Russe, op. 40, No. 5.

LISZT, FR.
Dreams of Love, any one.
Soirées de Vienna (Schubert). No. 4; 6.
On Pinions of Song (Mendessohn).
Rhapsodies Hongroises, No. 5.
Nocturne (La Regatta Venezia).
On Lake Wallenstadt and Album Leaf.

LUCAS, CLARENCE
Scherzo, Ariel, op. 55.

MACDOWELL, E. A.
Witches Dance, op. 17, No. 2.
Idyll, Shadow Dance, Intermezzo, op. 39.

MENDELSSOHN, F.
Songs without Words, Nos. 18 and 34; 25 and 21; 30 and 31.
Fantasia in F sharp minor, op. 28.
Rondo Brilliant in E flat, op. 29.

MOSZKOWSKI, M.
Etincelles, op. 6.
Waltz, A flat major.
Air de Ballet, op. 36, No. 5.
Moment Musical, op. 7, No. 2.
Guitarre, op. 45, No. 2.
Menuet, op. 17, No. 2.
Love Waltz, op. 5.

MOZART, W. A.
Pastorale Variée.
Thème with Variations in A, No. 8 (Peters' ed., vol. 273).
Sonata in D, No. 3 (Peters' ed., vol. 486).
Sonata in A, No. 12.

NICODE, J. L.
Melodie, op. 10.
Waltz, op. 28, No. 1.

OLESON, OLE
Fanitul, op. 28, No. 2, and Papillons, op. 50, No. 5.

PADEREWSKI, I. J.
Légend, op. 16, No. 1.
Mélodie, op. 16, No. 2.
Nocturne, op. 16, No. 4.

PAGANINI-SCHUMANN,
Caprice, op. 3, No. 2.

PHILIPP, ISIDOR
Caprice, op. 21.

PIECKZONKA, A.
Dancing Waves, op. 27.

POLDINI, ED.
Valse de l'Eventail, op. 27, No. 1.

RACHMANINOFF,
Valse, A major, op. 10, No. 2.
Ten Preludes, op. 23, No. 3; 5.
Barcarolle, op. 10, No. 3.

RAFF, J.
Rigaudon.
At Evening, La Fileuse (both).
Polka de la Reine. Impromptu Valse, op. 94.
Etude Melodique in A major, op. 130, No. 2.
Tambourin, op. 204, No. 6.

RAMEAU,
Gavotte and Variations, A minor.

RAVEL, MAURICE
Sonatina (any two movements).
Pavanne.

REINHOLD, H.
Impromptu in C sharp minor, op. 28, No. 3.

RITTER, THEODORE
Poetic Impressions, No. 6 (Summer).

RUBINSTEIN, A.
Kammenoi Ostrow, op. 10, No. 22.
Fifth Barcarolle in A minor.
Nocturne in F minor.

SAINT-SAENS, C.
Third Mazurka, op. 66.
Valse Canariote, op. 88.
Prelude and Fugue in E flat minor, op. 111, No. 3.

SCHUBERT, FR.
Impromptus, op. 142, No. 3.
Impromptus, op. 90, No. 1.

SCHUETT, E.
Valse Mignonne, op. 16, No. 2.
Gavotte-Humoresque, op. 17, No. 1.
Poeme d'Amour, op. 20, No. 2.
Valse Caprice, op. 32, No. 2 and Etude Mignonne, op. 16, No. 1.

SCHUMANN, R.
Novelletten, op 21, Nos. 1, 2, 3, 4, 5, 6, 7, any one.
Fantasiestücke, op. 12, Nos. 2; 3 and 4.
Scherzo and Gigue; Romanze and Fughette; op. 32.
Forest Scenes, op. 82, Nos. 4, 5 and 6; 7, 8 and 9.

SCHYTTE, L.
Forest Elves, op. 70, No. 5.

SCOTT, CYRIL
Lotus Land, op. 47, No. 1, and Danse Negre, op. 58, No. 5.

SIBELIUS, J.
Romance in D flat, op. 24, No. 9.
Impromptu, op. 24 , No. 1.

SINDING, C.
Nocturne in B minor, op. 20, No. 1.
Pianoforte Stücke, op. 24, No. 1 with 2 or 3.

STOJOWSKI, SIG.
Prelude, op. 1, No. 2.
Fileuse, op. 2, No. 1.

TAUBERT,
La Campanella, op. 41.

VOGRICH,
Staccato Caprice.

WEBER, C. M. VON
Invitation pour la Valse, op. 65 (Bulow ed. necessary).
Rondo Brillante, op. 62.
Polacca Brillante, op. 72.

WIENIAWSKI,
Valse de Concert, D flat, op. 3.

Technical Tests, etc., in Intermediate Piano Examination.

Candidates must be prepared to play, with accurate fingering and from memory, the following technical tests:—

SCALES.—All major, minor and chromatic scales in similar motion, legato, compass four octaves, in quarter, eighth and sixteenth notes, and staccato in quarter and eighth notes. Major and harmonic minor scales in similar motion separated by a third, a sixth, and a tenth; and in contrary motion beginning on the same note or octave, in quarter, eighth and sixteenth notes:—

♩ =108

Candidates will also prepare the scales in triplet rhythms, similar motion, in quarter (one note to a beat) and eighth (three notes to a beat) notes, compass three octaves.

CHORDS.—All major and minor common chords with inversions in triad and four note forms; dominant seventh and diminished seventh chords, four note forms, with inversions both solid and broken with arm strokes as may be required by examiner. Broken chords to be played in quarter, eighth and sixteenth notes. Solid chords in quarter notes only.

♩ =96

ARPEGGIOS.—Arpeggios formed of all the major and minor common chords, with inversions, compass four octaves, hands separately and together; all chords of the dominant and diminished seventh, hands separately and together, in quarter, eighth, and sixteenth notes.

♩ =100

OCTAVES.—All major, minor and chromatic scales, staccato and legato, hands separately and together.

Wrist staccato, in quarter, eighth and sixteenth notes.

Arm strokes and legato, in quarter notes.

♩ =72

EAR TEST.—Candidates must be prepared to sing, without accompaniment, the major and harmonic minor scales. A similar test will be made with the intervals of the perfect fourth, fifth and octave, major second, third, sixth and seventh, and minor third. Candidates who may be unable to sing will require to distinguish the scales and intervals included in this test, when played on the piano by the examiner (the candidate not to see the keyboard).

SIGHT READING.—Candidates will also be tested in sight playing.

The metronome will be used in connection with the technical tests at the Intermediate Piano Examination.

Intermediate Piano Certificate.

Successful candidates in the Intermediate Piano Examination, who have passed the Intermediate Theory Examination, will be awarded the Intermediate Piano Certificate of the University.

For particulars as to fees, see page 57.

Marks will be awarded under the following heads in the Intermediate Piano Examination:—

	MAXIMUM.
Scales,	8
Chords and arpeggios,	8
Octaves,	4
Accuracy of fingering, notation, etc.,	10
Phrasing, accent and interpretation,	16
Use of pedals,	8
Quality and gradation of tone,	10
Choice and steadiness of tempo,	10
Musicianship as displayed in self-studied pieces, etc.,	8
Memory playing,	8
Sight reading,	5
Ear test,	5

TEACHER'S COURSE IN PIANOFORTE.

Candidates will prepare ten numbers, seven from the following list of compositions, one of which must be by Bach, one by Beethoven, one by Chopin,—and three from the list of compositions for Intermediate Pianoforte.

Teacher's Course in Pianoforte.

BACH, J. S.
- English Suites: Nos. 1; 2; 4; 5.
- Well-Tempered Clavichord, Vol. 1:
  - Prelude and Fugue in C sharp major, No. 3.
  - Prelude and Fugue in E flat major, No. 7.
  - Prelude and Fugue in G major, No. 15.
  - Prelude and Fugue in A minor, No. 20.
- Well-Tempered Clavichord, Vol. 2:
  - Prelude and Fugue in C sharp minor, No. 4.
  - Prelude and Fugue in G minor, No. 16.
  - Prelude and Fugue in B flat major, No. 21.
  - Toccata and Fugue in E minor (Peters' edition, Vol. 210).
  - Toccata and Fugue in C minor (Peters' edition, Vol. 210).
  - Toccata and Fugue in D minor (Peters' edition, Vol. 210).
  - Toccata and Fugue in G minor (Peters' edition, Vol. 210).

BEETHOVEN, L. VAN
- Twelve Variations in A (Peters' Edition, vol. 298A).
- Sonata, op. 2, No. 1 (complete).
- Sonata, op. 2, No. 3 (any three movements).
- Sonata, op. 10, No. 1 (complete).
- Sonata, op. 10, No. 3 (complete).
- Sonata, op. 26 (complete).
- Sonata, op. 28 (any three movements).
- Sonata, op. 31, No. 1 (any two movements).
- Sonata, op. 31, No. 2 (any two movements).
- Andante Favori in F.

BOROWSKI, F.
- Sonata Russe (any three movements).

BRAHMS, J.
- Clavierstücke, op. 76, Nos. 1 or 2 with 3 or 4.
- Two Rhapsodies (either one) op. 79.
- Drei Intermezzi, op. 117 (complete).
- Hungarian Dances (any three).

CHAMINADE, C.
- Six Concert Studies, op. 35 (any two).
- Preludes Melodique, op. 84, Nos. 1, 2 and 3.

CHOPIN, F.
- Scherzos, op. 20; op. 31; op. 39, any one.
- Ballade in F major, op. 38.
- Ballade in A flat, op. 47.
- Polonaise, op. 26, No. 2.
- Fantasie in F minor, op. 49.
- Impromptu in F sharp, op. 36.
- Berceuse, op. 57 and Tarantelle, op. 43.
- Fantasie-Impromptu, op. 66 and Nocturne in B, op. 32, No. 1.

DEBUSSY, CLAUDE
- 12 Preludes:
  - Nos. 2, 3, 4, 9, 10, 12 (any one).
- Danses:
  - No. 1 (Danse Sacrée) and No. 2 (Danse Profane).
- Danse, and La Plus que Lente.

DONHANYI, ERNST VON
- Rhapsodie, op. 11, No. 3 in C major.

FRIML, R.
- Concert Waltz, op. 12.

GODARD, B.
- En Route.

GRIEG, E.
- Sonata, op. 7.
- Aus dem Volksleben, op. 19 (complete).
- Holberg Suite, op. 40 (complete).

HELLER, S.
- On Song's bright Pinions (Mendelssohn), op. 40.

KULLAK, T.
- School of Octâve Playing, op. 48, Part 2, Nos. 6; 7.

LISZT, FRANZ
- Forest Murmurs, Concert Etude, No. 1.
- Dance of the Gnomes, Concert Etude, No. 2.
- Sonette de Petrarca, No. 123, Hark! Hark the Lark (Schubert), and
- Sposalizio (any two).
- Etude de Concert in D flat.
- Rhapsodies Hongroises, Nos. 6, 7, 10, 11, 13 (any one).
- Isolde's Liebestod (Wagner).
- Cantique d'Amour.

MACDOWELL, E. A.
- Etude de Concert, op. 36.

MENDELSSOHN, F.
Andante and Variations, op. 82.
Andante and Variations, op. 83.
Capriccio Brilliante, op. 22.
Andante and Rondo Capriccioso, op. 14.

MOSKOWSKI, M.
Valse in A major, op. 17.
En Automne, op. 36, No. 4.
Scherzo Valse, op. 40.

MOZART, W. A.
Fantasia, No. 24 in C minor.

PIERNE, C.
Allegro Scherzando, op. 29.

RACHMANINOFF, S.
Polichinelle, op. 3, No. 4 and Prelude in E flat, op. 23, No. 6.

RHEINBERGER, J.
Toccata, op. 12.

REINECKE, C.
Ballade, op. 20.

ROSENBLOOM, S.
Three Concert Etudes, op. 5 (any two).

SAPELLNIKOFF, W.
Danse des Elfes, op. 3.

SCHUETT, E.
Carnival Mignon, op. 48 (complete).
A mon Amour, op. 77, No. 2.

SCHUMANN, R.
Sonata in G minor, op. 22 (first or fourth movement with second or third).
Three Romances, op. 28, (any two).
Faschingsschwank aus Wien, op. 26; Nos. 1, 2, 3; 4, 5.

SGAMBATI, G.
Toccata, op. 18.

Technical Tests, etc., in Teacher's Course Pianoforte Examination.

An oral examination will be conducted in which candidates must be prepared to answer questions on methods of teaching and to name technical exercises or studies suitable for the development of velocity, quality of tone, evenness of touch, and the proper cultivation of scales, arpeggios, part-playing, style and interpretation in the various stages of a student's musical development. The candidate should be familiar with the studies of Berens, Cramer, Clementi, Czerny, Doring, Kullak, Mocheles and others, and are advised to read "A Pedal Method" by Venino, or "Pedals of the Pianoforte" by Hans Schmidt, and "Principles and Expression in Pianoforte Playing" by A. F. Christiania from which questions will be asked relating to details of expression, phrasing, pedaling, rhythm, etc.

Candidates must also be prepared to point out errors which may be purposely introduced into some familiar composition as played by the examiner.

Candidates must be prepared to play two études from the studies of Cramer-Bulow, the two to be chosen from numbers 13 to 24; also three études from Clementi's Gradus ad Parnassum, and one étude from Haberbier's Op. 53 or Heller's Op. 46.

Candidates must be prepared to play with accurate fingering, and from memory, the following tests:—

SCALES.—All major, minor and chromatic scales, hands together, in similar motion, legato in quarter, eighth and sixteenth notes, and staccato in quarter and eighth notes, compass four octaves. Major and harmonic minor scales in similar motion, separated by a third, a sixth, and a tenth, and in contrary motion in quarter, eighth and sixteenth notes.

♩ =120

Candidates will also prepare the scales in accents of three, six, eight and nine.

CHORDS.—All major and minor common chords in triad and four note forms, dominant and diminished seventh chords, four note form, all with inversions, hands together, both solid and broken. The solid chords to be played in quarter notes, and the four note broken chords in quarter, eighth and sixteenth notes.

ARPEGGIOS.—Arpeggios formed of all the major and minor common chords, also dominant and diminished seventh chords with inversions, compass four octaves, hands together in quarter, eighth, and sixteenth notes.

OCTAVES.—All major, minor and chromatic scales, staccato and legato, in similar motion. Staccato in quarter, eighth, and sixteenth notes, and legato in quarter and eighth notes.

EAR TEST.—Candidates must be prepared to sing without accompaniment the major and minor scales (harmonic and melodic forms) and chromatic scales, or if unable to sing must recognize the scale (without seeing the keyboard) when played correctly or incorrectly by the examiner. The same tests will be made with all major, minor or perfect intervals within the compass of an octave.

SIGHT READING.—Candidates will also be tested in reading a piece of moderate difficulty at sight.

The metronome will be used in connection with the technical tests at the Teacher's Course Examination.

Marks will be awarded separately for the playing of the pieces and the technical tests, in each of which the candidates must obtain at least sixty per cent.

Candidates passing in one part of the examination, but failing in the other, although 60 per cent of the total combined number of marks may have been obtained, will be required to present themselves for a supplemental examination on that part of the examination in which they may have failed. The fee for this supplemental examination will be five dollars.

Marks will be awarded under the following heads in the Teacher's Course Pianoforte Examination.

	MAXIMUM.
Technique.—Scales, chords, arpeggios, octaves, studies, etc.	15
Oral tests, including questions on methods of teaching, etc.	20
Playing of pieces, accuracy of fingering, notation, etc. choice and steadiness of tempo, quality and gradation of tone	25
Musicianship, conception, interpretation, style, pedaling, etc.	30
Ear test	5
Sight reading	5

Diploma in Teacher's Course Pianoforte.

Successful candidates in the Teacher's Course Pianoforte examination who have passed the University Junior and Senior Theory examination will be awarded the diploma in Teacher's Course Pianoforte of the University.

Candidates' names (on proper forms of application) must be in the hands of the Secretary of the Faculty on or before May 9th. No application will be received after this date.

The fee for diploma will be returned to unsuccessful candidates.

Fee for examination	$10.00
Diploma	5.00

SINGING.

For all Candidates in Singing.

Candidates must bring their own accompanists. Teachers may act as such.

All accompaniments should be played as written.

Candidates have the option of singing the words of their solos either in the original language or in the English translation of the same.

All scales and studies should be vocalized to the word A (pronounced as in *father*), or sung to sol-fa syllables.

Primary Grade.

Successful candidates in the Primary Singing Examination will receive the Primary Singing Certificate of the University.

For particulars as to fees, see page 57.

Candidates must be prepared:—

(1) To sing any major scale, without accompaniment.

(2) To sing any major or perfect interval above any given note.

(3) To sing three studies, selected from Nos. 1-10 of Concone's "Fifty Singing Lessons," for medium voice.

(4) To sing four songs from the list given on page 35.

Marks will be awarded under the following heads:—

	MAXIMUM.
Voice production,	15
Correctness of intonation,	10
Management and control of breath,	8
Phrasing and expression,	12
Distinctness and correctness of pronunciation,	10
Accuracy as to tempo in the selected songs and studies,	10
Time and rhythm,	10
Flexibility,	7
Technical tests, etc.,	10
Precision and neatness in attacking and leaving notes,	8

Junior Grade.

Before a certificate is granted in this grade, candidates must pass the Junior Examination in the Theory of Music.

For particulars as to fees, see page 57.

Candidates must be prepared:—

(1) To sing any major or harmonic minor scale at various degrees of speed, without accompaniment.

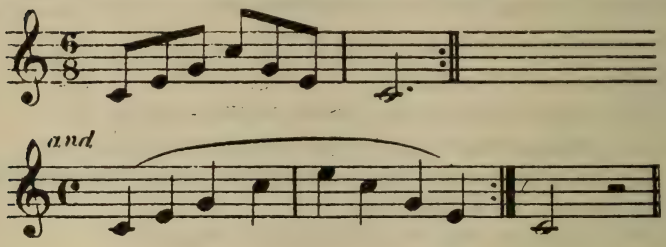
(2) To sing any major, minor or perfect interval above any given note.

(3) To sing, at sight, an easy melody, without accompaniment.

(4) To sing four studies of different character, one of which must be in a minor key, selected from Nos. 1-20 of Concone's "Fifty Singing Lessons" (medium voice), and from Nos. 1-18 of Concone's "Forty Lessons" for contralto (or bass).

(5) To sing five songs, three from group (a) and two from group (b).

(6) To sing arpeggios of the major and minor common chord, thus:



Marks will be awarded under the following heads:—

	MAXIMUM.
Voice production,	12
Correctness of intonation,	12
Management and control of the breath,	10
Variety of tone, phrasing and expression,	10
Distinctness and correctness of pronunciation,	6
Accuracy as to tempo in the selected songs and studies,	9
Time and rhythm,	10
Flexibility,	5
Precision and neatness in attacking and leaving notes,	10
Posture and facial expression,	6
Sight singing,	5
Technical tests,	5

Intermediate Grade.

Before a certificate is granted in this grade, candidates must pass the Intermediate Examination in the Theory of Music.

For particulars as to fees, see page 57.

Candidates must be prepared:—

(1) To sing any major, minor (melodic or harmonic) or chromatic scale, at various degrees of speed, and without accompaniment.

(2) To sing any diatonic or chromatic interval within the octave of any given note.

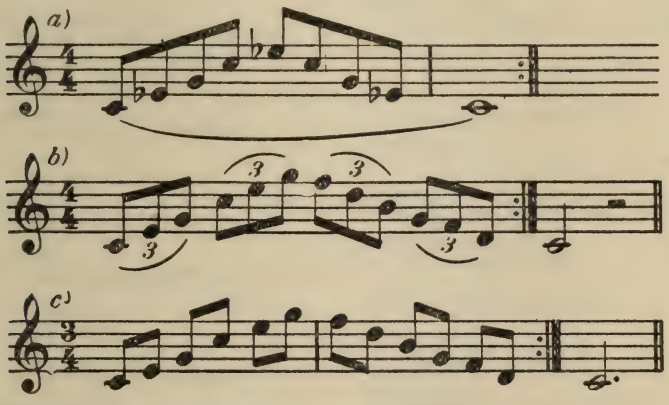
(3) To sing, at sight, an unaccompanied melody containing simple modulations.

(4) To sing two recitatives.

(5) To sing four studies of different character, two of which must be in a minor key, selected from Nos. 18-50 of Concone's "Fifty Singing Lessons" (medium voice), and from Nos. 16-40 of "Concone's "Forty Lessons" for contralto (or bass).

(6) To sing eight songs, four from each group marked (a) and (b).

(7) To sing arpeggios of the common chord and dominant seventh, thus:—



Marks will be awarded under the following heads:—

	MAXIMUM.
Voice production,	15
Correctness of intonation,	10
Management and control of the breath,	8
Variety of tone, phrasing and expression,	10

	MAXIMUM.
Distinctness and correctness of pronunciation,	8
Accuracy as to tempo in the selected songs and studies,	6
Time and rhythm,	8
Flexibility,	5
Precision and neatness in attacking and leaving notes,	6
Posture and facial expression,	5
Sight singing,	5
Recitative,	8
Technical tests,	6

Primary Singing.

ASHTON, A. L.
"Gather Meadow Daisies."
"The Summer of my Heart."

BARNETT,
"Cradle Song."

BARRY, K.
"For Awhile."

BLOW,
"The Self-Banished" (Folk Songs, No. 14).

BOHM, C.
"A little Song." (Elkin).

BRAHE, M.
"There's a Whisper in the Air."

BRAHMS,
"O guardian Angel."

BUNNING,
"When the Year was young and gay."

CHADWICK, G.
"O Love and Joy."

CHIPMAN, FLORENCE
"An evening Love-Song."

CLUTSAM,
"In the Harbour."

COX, GARNET W.
"Daffadowndilly." (Weekes).

DANIELS, M. W.
"The Lady of Dreams."

DAVIES,
"The Birds of Bethlehem."

DIX, J. A.
"Dorothy May."

DOREL,
"Calling me Home to you."

ELLIOTT,
"The whispering Wheat."

FORSYTH,
"Red Roses."

GEEHL,
"The Vales of Arcady."

GERMAN, E.
"From Wave to Wave."
"Little Boy Blue."

GRANT, DOUGLAS
"The Lark in its Nest."

GRIEG,
"Faith," op. 33, No. 11.

HALSEY,
"Cossack Song."

JOHNSON, N.
"Remembrance."
"Teach me the Charm."
"Loyalty."

LEHMANN, L.
"My lovely Child."

LOGAN,
"The little Clouds."

LOHR,
"Rose of my Heart."

LUCAS, CLARENCE
"An Iroquois Serenade."

MACDOWELL,
"O lovely Rose."

NOEL, JOCELYN
"White Rose."

NOVELLO, I.
"Blue Eyes."

OULTON, R. A.
"Bye-Low."

QUILTER, ROGER
"Slumber Song."

RUSSELL, KENNEDY
"Flower of my Heart."

SCOTT, CYRIL
"Scotch Lullaby," op. 57 (Elkin).

SCUDERI, S.
"Tally-Ho; Gone away." (Boosey).

SCHUBERT,
"Morning Greeting."

SCHUMANN,
"I ne'er will roam," op. 51, No. 3.

SIMSON, H. F.
"Little fragrant Flower" (Boosey).

SOMERVILLE, R.
"Canterbury Bells."

STONE, G. H.
"Her Mother's Voice."

STRELEZKI, A.
"Baby's Dreamland."

SULLIVAN,
"Where is Another Sweet?"

TIRINDELLI,
"Absent" (Ricordi).

WHITE, MAUDE V.
"Little rosy Foot."
"To his Beloved."

WOOD HAYDN
"The sea Road."
"Sheila."

Junior Singing.

List (a)—

ABT, FR.
"Sweet Dream."
"Rose of Roses."

AIDE, H.
"Le vrai Bon-Heur" (Boosey).

ARNE, T. A.
"Blow, blow, thou winter Wind."

BENNETT, STERNDALE
"May-dew."

BOYCE,
"By thy Banks gentle Stour."

BRAHMS,
"Cradle-Song," op. 49, No. 4.

CHOPIN,
"The Maiden's Wish."

FRANZ, R.
"Goodnight."

GRIEG,
"Cradle-Song."
"The old Song."

HANDEL,
"How beautiful are the Feet of them that preach the Gospel of Peace."

HAYDN,
"My Mother bids me bind my Hair."

HENSCHEL, G.
"The sunny Beam."
"Swiss Song."

HERVEY,
"Violet" (Schott).

JENSEN,
"Mother O sing me to Rest," op. 53.

MALLINSON,
"The Rosebud."
"Four by the Clock."

MANCINELLI, L.
"Paternoster."

MACDOWELL, E. A.
"Folksong," op. 7, No. 3.
"Confidence," op. 7, No. 4.

MACKENZIE,
"Winter, it is past."
"Spring-Song."

MACPHERSON, G.
"Young Rose."

PURCELL,
"Fairest Isle."

SCHUBERT,
"Whither?"
"Crusaders."

SCHUMANN,
"The Lotus Bloom."

STAINER,
"The Rose-Bush" (Novello).

TSCHAIKOWSKY,
"Deception," op. 65, No. 2.

List (b)—

ALLITSEN,
"My Laddie."
"The Stars are with the Voyager."

AUSTIN, F.
"It was a Lover and his Lass."
"Faith, Hope and Charity."

BATH, H.
"Longing."
"Vikings War-Song."

BATTEN, R.
"Sea-Life."
"Warriors Love-Song."

BISHOP,
"Love has Eyes."

BRAHE, M.
"A Japanese Love-Song."

BUCK,
"When the Heart is young."

CAPEL,
"Three Fishers."

COATES, ERIC
"Tell me where is Fancy bred."
"Japanese Farewell."

ESIPOFF, S.
"Baby mine."

HAM, ALBERT
"Maiden, with thy Lips so rosy."

LUCAS,
"The coming Years."

MACLEAN,, A.
"Hold me with a Charm."

MARTIN, E.
"The Tune of open Country."

RONALD, LANDON
"April's here."
"Have you forgotten?"
"My Realm of Love."
"To Daffodils."

SULLIVAN, A.
"County Guy."

TOSTI,
"Mattinata."
"Never."

WOODMAN,
"An open Secret."

WILLEBY,
"The four-leaf Clover."
"Night Fairies."

YEARSLEY, C. B.
"The Sweet of the Year."
"Buttercups are blowing."

Intermediate Singing.

List (a)—

ARNE,
"The Lass with the delicate Air."

BACH,
"Slumber Song" (Christmas Oratorio).

BEETHOVEN,
"Knowest thou the Land?"
"In questa tomba oscura."

BISHOP,
"Should he upbraid."

BRAHMS,
"Sapphic Ode."
"The Nightingale," op. 97, No. 1.

COLERIDGE-TAYLOR,
"Tell, O tell me."

COSTA,
"I dreamt I was in Heaven."

DAVIES, WALFORD
"The Farewell," (Novello).

DEBUSSY,
"The Mandolin."
"Romance."

DELIBES,
"Bonjour Suzon."

ELGAR,
"Pleading."
"Come, gentle Night."

FRANCK, C.
"The Wooing of the Rose."

FRANZ,
"Love awakes."

GRIEG,
"The Princess."
"The Swan."

MACKENZIE,
"Gentle Dove." (Colomba).

MOZART,
"The Violet."

PARRY, C. H.
"Dirge in Woods."

PERGOLESI,
"The Coquette."

RACHMANINOFF,
"O thou billowy Harvest-Field."

SINDING,
"I heard the Gull."
"The Mother sings."
(as one number).

SCARLATTI,
"Non dar più pene."

SCHUBERT,
"To the Moon."
"Litany."

SCHUMANN,
"A red red Rose."

TAUBERT,
"In a strange Land."

List (b)—

ALBERTINI,
"Hope."

ALLITSEN,
"One Star Only."
"Won."

BAILEY,
"The Carol of the Lark."

BANTOCK,
"As I ride" (Boosey).

BENDALL,
"The Pixies."

BLUMENTHAL,
"Sleep."

CHAMINADE,
"Rest."
"L'éte."

CLAY.
"She wandered down the mountain Side."

COLERIDGE-TAYLOR,
"Eleanore."

DAVIES, H. WALFORD
"Dreaming for ever."

DAVIES, J. D.
"Goodnight."

DVORAK,
"Songs my mother taught me."

ELGAR,
"The Swimmer."

FLETCHER,
"Galloping Dick."

FOOTE,
"An Irish Folk-Song."
"A Song of Summer."

GEEHL,
"O Bird of Heaven."

GERMAN, E.
"Rolling down to Rio."
"Sweet Rose."

GODARD,
"Berceuse."

GOETZ, A.
"Song of the Wind."

GOULD,
"Molly Dear."

GOUNOD,
"Sing, smile, slumber."

GRECO,
"To Seraphina." (Boosey).

HARTY, HAMILTON
"Sea Wrack."
"By the Bivouac's fitful Flame."

HAWLEY,
"Love's Life."

HENSCHEL, G.
"Florentine Serenade."

HERON-MAXWELL,
"What is Life."
"Happiness." (as one number).

HOLBROOKE, J.
"Come to the West."

HOLMES, A.
"An Irish Noel."

KING, O.
"Israfel" (Boosey).

KORBAY,
"The white Flag." (Boosey).

LEHMANN, L.
"At Sunset."
"When green Leaves come again."

LOHR,
"The Wind on the Heath."
"Where my Caravan has rested."

MALLINSON,
"A Birthday."

MARTIN,
"All in lily-white Gown."

ROGERS,
"Wind Song."

RONALD, LANDON
"The captive Lark."
"For Phyllis."
"Summer and Winter."
"Secret Love."
Any two (Enoch).
"Pluck this Little Flower."
"Light—my Light."
As one number.

SCOTT, CYRIL
"My Captain."
"Villanelle."
"Yvonne of Brittany."

STANFORD,
"John Kelly."
"Boot Saddle to Horse."
"The willow Tree."
"Le Carillon du Verre."

SULLIVAN, A.
"From Rock to Rock."
"Wake then, Awake."

THOMAS, GORING
"Love's Echoes" (Aimona).

TROTERE,
"A Rose in Heaven."

WALLACE, W.
"The spacious Firmament."
"Son of mine."

WALTHEW,
"May-Day."

WARE, HARRIET
"Boat Song."

WHITE,
"So we'll go no more a-Roving."

WILLIAMS, VAUGHAN
"Dreamland."
"Linden Lea."

WOOD, H. J.
"Darling, how I love thee."

WOODFORDE-FINDEN, A.
"White Sentinels."

YON, P. A.
"The Fool of Thule."

Recitative.

Soprano.

HANDEL,
"And the Angel said unto them" (Messiah).
"No more in Zion" (Judas Maccabaeus).
"Blest be the Lord" (Solomon).

HAYDN,
"O welcome now" (The Seasons).

Contralto.

COSTA,
"Weep not, my Mother" (Naaman).

HANDEL,
"Great Prophetess" (Deborah).

MENDELSSOHN,
"Now Cherith's Brook is dried up" (Elijah).

Tenor.

HANDEL,
"My Arms! against the Gorgias will I go" (Judas Maccabaeus).
"Thanks to my Brethren" (Judas Maccabaeus).

HAYDN,
"And God created Man" (Creation).

Bass.

HANDEL,
"I'll hear no more" (Esther).
"Be comforted" (Judas Maccabaeus).

HAYDN,
"At last the bounteous Sun" (The Season).

ORGAN.

Junior Grade.

Candidates must be prepared to play eight compositions selected from the following list. One number, at least, must be chosen from the list of pieces by Bach and two numbers from the list of pieces by either Mendelssohn, Merkel, or Rheinberger, the candidate being permitted the freedom of choice in the remaining five pieces. One number must be prepared without teacher's assistance:—

BACH, J. S.
- Eight short Preludes and Fugues BK. I., (Novello's Edition) any two.
- Prelude and Fugue in C minor, (Novello's Edition) BK. II.
- Prelude and Fugue in E minor, (Novello's Edition) BK. II.
- Prelude and Fugue in A major, (Novello's Edition) BK. III.
- Fantasia and Fugue in C minor, (Novello's Edition) BK. III.

BAIRSTOW, E. C.
- Scherzo in A flat.

BUCK, DUDLEY
- At Evening.

BUESSER, HENRI
- Marche de Fête, op. 36 (Durand et Fils edition).

CALKIN, J. BAPTISTE
- Andante con moto, op. 101.
- Festival March, op. 80.

D'EVRY, E.
- Meditation (Lemare's Recital Series No. 13).

DESHAYES,
- Prelude in D (Schirmer).

DUBOIS, TH.
- Marche de Procession in D.
- Cantilene Nuptiale in A flat.
- Toccata in G.

GIGOUT, E.
- Marche Religieuse in E flat.

GUILMANT, A.
- Marche triumphale in E flat, op. 34 (Novello edition).
- Canzona in A minor, op. 40.
- Allegretto in B minor, op. 19.
- Cantilene pastorale in B minor, op. 15.
- Prière et Berceuse, op. 27.

HANDEL-THORLEY, W.
- Grand Choeur in D, op. 18.
- Cazonne (Durand et fils ed.).

HAILING, R. G.
- Chanson de Joie.

HOLLINS, ALFRED
- In Springtime.
- Berceuse.
- Spring Song.

HOPKINS, ED. J.
- Adagio cantabile in D (Weekes' ed.).

KARG-ELERT, S.
- Choral Improvisationen, op. 65, Nos. 16, 33, 44, 45, 59; any two.

LEMARE, E. H.
- Chant sans paroles.
- Gavotte Moderne.
- Spring Song (From the South).
- Souvenir.
- Traumlied.
- Liebestraum.
- Romance in D flat.

LEMMENS, J. N.
- Prayer in E.
- Marche Triumphale in D.
- Finale in D.

MERKEL, GUSTAV
- Prelude in E flat, op. 100, No. 1.
- Postludium in D.
- Pastorale in G.
- Fantasia in E minor, op. 133.
- Overture in C.

MENDELSSOHN, F. B.
- Prelude and Fugue in G, No. 2.
- Sonata in C minor, No. 2.
- Sonata in D, No. 5.

REA, WM.
- Three Organ Pieces (any one). Augener edition, No. 8771.

RHEINBERGER, JOS.
- Twelve Trios, op. 189 (any one).
- Twelve Characteristic Pieces, op. 156 (any one).

RINCK,
- Postulude in F major, Organ School, Bk. V., No. 3.

SAINT-SAENS,
- Communion in E, op. 13.

SALOME, TH.
Cantilene in A minor.
Offertoire in D flat.
Grand Choeur in A.

SILAS, E.
March in B flat, op. 95, No. 2.
Meditation in a Cathedral, op. 95. No. 5.

SMART, HENRY
Andante Grazioso in G.
Moderato in D.
Six short and easy Pieces (any one) Novello's edition.
Three Andantes in C, F, A; any one.

TOURS, B.
Allegretto Grazioso.
Minuet and Trio in G.
Fantasia in C.

WEST, J. E.
Three Preludes (2nd ser). Any two. Novello's edition.

WESLEY, S. S.
Larghetto with variations in F sharp minor.
Andante in E flat (2-4 time).
Andante in G (3-4 time).

WHEELDON, H. A.
Cantilene (Lemare Recital Series).
Berceuse in G.

WOLSTENHOLME, W.
Andantino (Lemare Recital Series).
Canzona (Lemare Recital Series).
Le Carillon.
The Question and The Answer. (Any one).

Candidates must also be prepared to play on pedals all major scales, compass one octave; to play at sight a simple chant or hymn tune as may be required by the examiner; to transpose at sight a simple chant; play at sight a simple organ composition, and to answer questions on pitch and character of stops, and registration, etc. There will also be an ear test on the major, minor and perfect intervals within the octave.

Junior Organ Certificate.

Successful candidates in the Junior Organ Examination who have passed the Junior Theory Examination, will receive the Junior Organ Certificate of the University.

Marks will be awarded under the following heads in the Junior Organ Examination:—

	MAXIMUM.
Accuracy as to notes, rests, etc.,	10
Independence of action between hands and feet,	8
Touch—legato, clear part-playing, etc.,	12
Choice and management of stops,	6
Phrasing,	12
Strictness and choice of tempo,	10
Musicianship in general requirements and self-studied piece	12
Sight playing,	6
Hymn playing,	6
Transposition,	6
Ear test,	6
Questions on organ, stops, etc.,	6

For particulars as to fees, see page 57.

Intermediate Grade.

Candidates must be prepared to play eight compositions selected from the following list. One number, at least, must be chosen from the list of pieces by Bach; one sonata by Mendelssohn or Rheinberger; one other sonata, suite or concerto; one overture—the candidates being allowed freedom of choice in the remaining four pieces. One number must be prepared without the teacher's assistance:—

BACH, J. S.
- Sonata in E flat, No. 1, Novello's edition, Bk. IV.
- Sonata in D minor, Novello's edition, Bk. IV.
- Concerto in G, Novello's edition, Bk. XI.
- Prelude and Fugue in G, Novello's edition, Bk. VIII.
- Prelude and Fugue in A minor.
- Prelude and Fugue in C, (Novello's Edition) Bk. III.
- Prelude and Fugue in E flat (St. Ann's), (Novello's Edition) Bk. VI.
- Toccata and Fugue, D minor, (Novello's Edition) Bk. VI.
- Chorale Prelude in A (4-4 time) Novello, O.C. 318. (Allein Gott in der höh' sei ehr).
- Choral Prelude in G (6-8 time) Novello, O.C. 310.
- Choral Prelude (Wachet auf). Novello O.C. 356.

BERENS, HERMANN
- Fantasia in C minor, Augener's edition, No. 8722.

BOROWSKI, FELIX
- Sonata, No. 1 in A minor.
- Suite No. 1 in E minor, Laudy ed.

BOELLMANN, L.
- Suite Gothique.

BRAHMS, J.
- 11 Choral Preludes, Nos. 1, 2 and 3; 8, 9, 10 and 11,, Simrock ed.

BREWER, A. HERBERT
- Triumphal Song.

FRANCK, C.
- Pastorale in E, op. 19, No. 4.
- Three pieces, Fantasia, Cantabile, Piece heroique; any one.

FRICKER, H. A.
- Concert overture in C minor.

GADE, N.
- Three pieces (Any one). Augener ed., 8704.

GUILMANT, A.
- Marche sur un thème de Handel, op. 15.
- Légende and Final Symphonique, op. 71.
- Finale, Grand Choeur in E flat, op. 40.
- Marche Funèbre and Chant Seraphique, op. 17.
- Fantasia sur deux Mélodies Anglaises, op. 43.

HANDEL,
- Occasional Overture.

HANDEL-BEST,
- Six Concertos, Nos. 3, 5, 6 (any one).

HARWOOD, BASIL
- Requiem Aeternam.

HESSE, A.
- Variations on an original theme in A flat.
- Variations on an original theme in A.
- Toccata in A flat.

HOLLINS, ALFRED
- Overture in C major.
- Overture in C minor.
- Intermezzo in D flat.
- Triumphal March.

HOPKINS, ED. J.
- Allegro Finale in A (Jubilee).
- Andante Grazioso.
- Allegro Moderato in A (Weekes' ed.).

HOYTE, W. S.
- Scherzo in B flat.

JOHNSON, BERNARD
- Two Duologues (both).

KARG-ELERT, SIGFRID
- Trois Impressions, op. 72 (any one).
- Choral Improvisationen, op. 66, Nos. 12, 38, 47 (any one).

LEMARE, E. H.
- Marche Solennelle.
- Rêverie, op. 20.
- Pastoral Poem, op. 54.

LEMMENS, J. N.
- Fantasia in A minor (Schirmer).
- Hosannah; Ite missa est; Sonata Pontificale.

LLOYD, C. H.
Sonata in D minor, Novello.

MACPHERSON, CHAS.
Fantasy Prelude, Novello.

MENDELSSOHN, F. B.
Sonatas, Nos. 3, 4, 6 (any one).
Prelude and Fugue in D minor, No. 3.
Prelude and Fugue in C minor, No. 1.

MERKEL, GUSTAV
Sonata, No. 5, D minor, op. 148.
Sonata, No. 6, E minor, op. 148.
Adagio in E, op. 35, Augener ed. 8706.

PARRY,
Chorale Preludes, Books 1 and 2, any two numbers.

PIUTTI,
Sechs Stücke, op. 11 (any one).

RAFF, J.
Introduction and Fugue in E minor, Augener ed, 8702.

REGER, MAX
3 Organ Pieces, op. 7, any two, Augener ed, 5825.

RHEINBERGER, J.
Fantasia Sonata in A flat, No. 2. Augener ed., 8701.
Pastoral Sonata in G, No. 3.
Sonata in A minor, No. 4.
Sonata in F sharp minor, No. 5.
Monologues, op. 156 (any two).
Twelve Pieces, op. 174 (any two)

SAINT-SAENS, C.
Elevation in E.
Benediction Nuptiale.
Fantasia in E flat.
Prelude and Fugue in B, op. 99, No. 2.

SCHUMANN, R.
Six Studies, op. 56 (any two).

SILAS, E.
Fantasia on St. Ann's Tune.

SMART, H.
Postlude in D. Novello.
Andante E minor. Novello.
Andante in G. Novello.
Solemn March in E flat.
Con moto, en forme l'ouverture. Ashdown.

STEWART, R. P.
Concert Fantasia in D minor. Novello.

WESLEY, S. S.
Choral Song and Fugue.
Andante in F.

WEST, J. E.
Finale Jubilante. Novello.
Festal Commemoration. Novello.
"O Filii" with variations. Novello.

WIDOR, C. M.
First Symphony (Marche Pontificale Intermezzo, Finale).
Second Symphony (Salve Regina, Pastorale, Finale).

WILLAN, HEALEY
Prelude and Fugue in C minor.
Epilogue.

WOLSTENHOLME, W.
Cantilene in A flat.
Sonata in style of Handel.
Festival Toccata in B flat.
Overture in F.

Candidates must be prepared to play all major and minor scales on pedals, compass one octave; to play at sight, and with appropriate registration, several verses of a hymn tune or choral; to play at sight an organ composition; to transpose a hymn tune or choral into any key required within the compass of a third, above or below, to answer questions on organ construction and registration, etc., and to pass an ear test on any interval within the octave.

Intermediate Organ Certificate.

Successful candidates in the Intermediate Organ Examination, who have passed the Intermediate Examination in Theory, will receive the Intermediate Organ Certificate of the University.

Marks will be awarded under the following heads in the Intermediate Organ Examination:—

	MAXIMUM.
Accuracy as to notes, rests, etc.,	10
Independence of action between hands and feet,	8
Touch—legato, clear part-playing, etc.,	12
Choice and management of stops,	6
Phrasing,	12
Strictness and choice of tempo,	10
Musicianship in general requirements and self-studied piece,	12
Sight playing,	6
Hymn playing,	6
Transposition,	6
Ear test,	6
Questions on organ, stops, etc.,	6

For particulars as to fees, see page 57.

VIOLIN.

Primary Grade.

NOTE.—Candidates must bring their own accompanist, their teachers being permitted to act as such. Candidates are also requested to have their strings, pegs, and bows in perfect condition.

Candidates will be required to prepare six studies, and four pieces chosen from the following list, one piece being selected from each group:—

Studies.

DONT,
Op. 38, Twenty Exercises.

Pieces.

Group No. 1:—

DANCLA,
Six airs variés, op. 89 (any one).

CORELLI,
One "Sarabande," one "Gavotte," and one "Gigue" (these three being considered as one number). Use Litolff edition.

HENRY J. HAROLD
Mazurka.

BOROWSKI,
Adoration.

DOELB, WILHELM
Bolero, op. 44, No. 2.

Group No. 2:—

HANDEL,
Bourrée (Classic Pieces, Peters).

MOZART,
Menuetto (Classic Pieces, Peters).

BACH,
Loure (Classic Pieces, Peters).

GABRIEL-MARIE,
La Cinquantaine.

GILLET,
Passepied.

BOCCHERINI,
Menuetto.

GLUCK,
Gavotte from Don Juan.

DITTERSDORF,
Deutscher Tanz (Burmester).

Group No. 3:—

GLUCK,
Andante (Classic Pieces, Peters).

BACH,
Sarabande (Classic Pieces, Peters).

TARTINI,
Adagio (Classic Pieces, Peters).

HUMMEL,
Romance (Classic Pieces, Peters).

HANDEL,
Largo (Classic Pieces, Peters).

HAYDN,
Serenade.

SCHUBERT,
Preghiera.

SCHUMANN,
Träumerei.

Group No. 4:—

HUSSLA,
Barcarolle.

SEITZ,
Menuett.

HENRY, J. HAROLD
Valsette.

WARNER, H.
Allegretto Grazioso.

PAPINI,
Romanze in F.

BOHM,
Moto perpetuo (in D).

BOROWSKI,
Berceuse.

STEARNS, C. C.
Serenade.

BUSCH, CARL
The Top.

HERRMANN, TH.
Serenade, op. 77.

N.B.—Candidates are advised to memorize as much as possible of their work.

Technical Tests, etc.

Candidates must be prepared to play (from memory) all the major scales and all the minor scales (both melodic and harmonic forms) through two octaves.

Sight Reading.

Candidates will be required to play at sight a simple piece in the first three positions.

Primary Violin Certificate.

Successful candidates in the Primary Violin Examination will be awarded the Primary Violin Certificate of the University.

For particulars as to fees, see page 57.

Marks will be awarded under the following heads in the Primary Violin Examination:—

	MAXIMUM.
Position,	12
Purity of intonation,	12
Tone—quality and volume,	12
Technique, left hand,	12
Technique, bowing,	12
Accuracy of notation in both bow and finger markings,	10
Style, conception (natural qualifications),	10
Memory,	10
Sight reading,	10

Junior Grade.

NOTE.—Candidates must bring their own accompanist, their teachers being permitted to act as such. Candidates are also requested to have their strings, pegs, and bows in perfect condition. Candidates will be required to prepare six studies, and six pieces chosen from the following list, one piece being selected from each group.

Studies.

KREUTZER,
42 Studies (Hermann or David edition preferred). Any six studies taken from these between No. 2 and No. 30.

Pieces.

Group No. 1:—

DE BERIOT,
Scène de Ballet (Bolero, or Tempo di Valse).
Air Varié No. 6 or No. 7.

RODE,
7th Concerto (1st or 3rd movement).
Air Varié in G (David).

BACH,
Concerto in A minor (1st or 3rd movement).
Concerto in E (1st or 3rd movement).

Group No. 2:—

VIEUXTEMPS,
Rêverie.

ERNST,
Elégie.

SPOHR,
Barcarole.

HOLLAENDER,
Spinning Song.

BOHM,
Cavatina.

RAFF,
Cavatina.

Group No. 3:—

WIENIAWSKI,
Mazurkas (any one).

DVORAK,
Indian Canzonetta.

RIES,
Barcarolle (op. 34).

RAMEAU,
Rigaudon (Burmester).

Group No. 4:—

BACH,
Air on G string.

BORNSCHEIN,
Rêverie Tristesse.

GODARD,
Berceuse from Joselin.

ARNOLD, G. W.
Meditation.

SIMON,
Berceuse.

SITT,
Barcarole.

SCHUMANN,
Evening Song (Joachim).

RIES,
Barcarole from Suite in G.

Group No. 5:—

HANDEL,
Sonatas (any one).

SCHUBERT,
Sonatinas (any one).

MOZART,
Sonatas (any one).

Group No. 6:—

DVORAK,
Humoreske (Kreisler).

SINDING,
Prelude (op. 43).

HUSS, HENRY HOLDEN
Romance in E.

GOSSEC,
Gavotte.

MOZART,
Deutscher Tanz.

D'AMBROSIO,
Waltz.

DRDLA,
Souvenir.
Serenade.

DEBEFVE,
Berceuse (G major).

N.B.—Candidates are advised to memorize as much as possible of their work.

Technical Tests, etc.

Candidates must be prepared to play from memory all major scales, also all minor scales (melodic and harmonic forms) through three octaves; also all major scales in thirds, sixths and octaves; compass—one octave only.

Sight Reading.

Candidates will be required to play at sight a piece of moderate difficulty.

Junior Violin Certificate.

Successful candidates in the Junior Violin Examination, who have passed the Junior Theory Examination, will be awarded the Junior Violin Certificate of the University.

Marks will be awarded under the following heads in the Junior Violin Examination:—

	MAXIMUM.
Tone—quality and volume,	15
Technique, left hand,	15
Technique, bowing	15
Rhythm, choice of tempo, phrasing, etc.,	15
Style, emotion, brilliancy (natural qualifications)	15
Sight reading,	15
Memory,	10

For particulars as to fees, see page 57.

Intermediate Grade.

NOTE.—Candidates must bring their own accompanist, their teachers being permitted to act as such.

Candidates will be required to prepare six studies and seven pieces chosen from the following list, one piece being selected from each group:—

Studies.

KREUTZER,
42 Studies (the exercises in double stopping).

RODE,
24 Caprices.

Pieces.

Group No. 1:—

DE BERIOT,
Concertos (any one, complete).

MOZART,
Concertos (2 movements from any one).

VIOTTI,
22nd Concerto (1st or 3rd movement).

KREUTZER,
Concertos (13th or 19th complete).

Group No. 2:—

WIENIAWSKI,
Legende.

RIES,
Adagio from Suite in G.

BEETHOVEN,
Romance in G.
Romance in F.

BOHM,
Legende.

BRUCH,
Kol Nidrey.

GODARD,
Adagio from Concerto in A minor.
Adagio pathetic.

GOLDMARK,
Andante from Concerto.

BROCKWAY,
Romance, op. 31, No. 3.

Group No. 3:—

SPOHR,
Adagio from 9th Concerto.
Adagio from 11th Concerto.
Adagio from 7th Concerto.

VIOTTI,
Adagio from 22nd Concerto (David).

MOZART,
Adagio from Concerto in A (David).

BRUCH,
Adagio from Concerto in G minor.

MENDELSSOHN,
Andante from Concerto in E minor.

Group No. 4:—

WIENIAWSKI,
Valse Caprice.

HUBAY,
Hejra Kati.

D'AMBROSIO,
Romanze.

VIEUXTEMPS,
Fantasie Caprice.

ZARZYCKI,
Mazurka.

VIEUXTEMPS,
Ballade e Polonaise.

MENDELSSOHN,
Andante (from Concerto).

LEONARD,
Souvenir de Bade.

WILHELMJ, A.
Ballade, op. 40.

DRDLA, F.
Polichinelle, op. 41.

Group No. 5:—

RIES,
Suite in G (moto perpetuo).

HAUSER,
Hungarian Dances.

LECLAIR,
Tambourine.

SCHUBERT,
L'abeille.

PAGANINI,
Moto perpetuo.

VIEUXTEMPS,
Tarantelle, op. 22, No. 5.

HUBAY,
The Butterfly.

Group No. 6:—

RUST,
Sonata in D minor.

LECLAIR,
Sonatas (David), any one.

NARDIDI,
Sonatas (David), any one.

BEETHOVEN,
Sonatas Nos. 1, 2, 4, 5 (any one).

GADE,
Sonatas (any one).

BACH,
Sonatas for Violin Solo, any two movements.

Group No. 7:—

MASSENET,
Crépuscule (Hubay).

FLOERSHEIM,
Idylle.

TSCHAIKOWSKI,
Sérènade Mélancholique.

MASSENET,
Meditation de Thais.

DEBUSSY,
En Bateau.
Menuet.

PAPINI,
Contemplation.

SARASATE,
Miramar, op. 42.

Technical Tests, etc.

Candidates must be prepared to play from memory the major and minor scales in thirds, sixths and octaves through two octaves, also arpeggios in octaves (compass two octaves).

Technic of the Bow.

Sight Reading.

Candidates will be required to play at sight one slow and one quick movement of moderate difficulty.

Intermediate Violin Certificate.

Successful candidates in the Intermediate Violin Examination, who have passed the Intermediate Theory Examination, will be awarded the Intermediate Violin Certificate of the University.

Marks will be awarded under the following heads in the Intermediate Violin Examination:—

	MAXIMUM.
Tone—quality and volume,	15
Technique, left hand,	15
Technique, bowing,	15
Individuality, style and natural qualifications,	15
Interpretation, choice of tempo, phrasing, etc.	15
Sight reading,	15
Memory,	10

For particulars as to fees, see page 57.

VIOLONCELLO.

Primary Grade.

NOTE.—Candidates must bring their own accompanist, their teachers being permitted to act as such. Candidates are also requested to have their strings, pegs and bows in perfect condition.

Candidates will be required to prepare fifteen studies and four pieces chosen from the following list, one piece being selected from each group:—

Studies.

LEE, SEBASTIAN
Op. 31, 40 Exercises.

Pieces.

Group No. 1:—

GABRIEL-MARIE,
La Cinquantaine.

LEE, SEBASTIAN
Gavotte, op. 112.

Group No. 2:—

GOLTERMAN, GEORGE
Andante (from A minor Concerto).

SCHUMANN,
Träumerei.

POPPER,
Wiegenlied.

THOME, FRANCIS
Simple Aveu.

GODARD,
Berceuse.

FISHER,
Romance.

Group No. 3:—

MASSENET,
Elegie.

WAGNER,
Evening Star.

GABRIEL-MARIE,
Lamento.

MENDELSSOHN,
Spring Song.

GILLET,
Madrigal.

Group No. 4:—

BURGMUELLER,
3 Nocturnes.

GOLTERMAN,
Romance.
Le Rêve.

DUNKLER,
Rêverie.

RUBINSTEIN,
Melody in F.

NOTE.—Candidates are advised to memorize as much as possible of their work.

Technical Tests, etc.

Candidates must be prepared to play from memory all major and the melodic minor scales through two octaves.

Sight Reading.

Candidates will be required to play at sight a simple piece in the four first positions.

Primary Violoncello Certificate.

Successful candidates in the Primary Violoncello Examination will be awarded the Primary Violoncello Certificate of the University.

For particulars as to fees, see page 57.

Marks will be awarded under the following heads in the Primary Violoncello Examination:—

	MAXIMUM.
Position,	12
Purity of intonation,	12
Tone—quality and volume,	12
Technique, left hand,	12
Technique, bowing,	12
Accuracy of notation in both bow and finger markings,	10
Style, conception (natural qualifications),	10
Memory,	10
Sight reading,	10

Junior Grade.

NOTE.—Candidates must bring their own accompanist, their teachers being permitted to act as such. Candidates are also requested to have their strings, pegs and bows in perfect condition.

Candidates will be required to prepare six studies and six pieces chosen from the following list, one piece being selected from each group:—

Studies.

GRUETZMACHER,
Op. 38.

MERCK,
20 Exercises.

Pieces.

Group No. 1:—

POPPER,
Gavotte in D.

GOLTERMAN,
Tarantelle.

FISHER,
Czardas.

DE BOISDEFFRE,
Suite Orientale.

Group No. 2:—

CHOPIN,
Nocturne (Servais).

POPPER,
Widmung.

MASSENET,
Last Dream of the Virgin.

Group No. 3:—

GOLTERMAN,
Grand Duo, op. 25.

POPPER,
Romance.

GILLET,
Pastorale.

THOME,
Andante Religioso.

SAINT-SAENS,
Le Cygne.

DUNKLER,
La Fileuse.

Group No. 4:—

MENDELSSOHN,
2 Sonatas.

BEETHOVEN,
5 Sonatas.

Group No. 5:—

ROMBERG,
Concertino.

LEE,
Op. 39—Duets.

Group No. 6:—

SCHROEDER,
Concerto.

GOLTERMAN,
3rd or 4th Concerto.

NOTE.—Candidates are advised to memorize as much as possible of their work.

Technical Tests, etc.

Candidates must be prepared to play from memory all major and melodic and harmonic minor scales and also arpeggios through two octaves; they will also be tested in the simplest form of double stopping.

Sight Reading.

Candidates will be required to play at sight a piece of moderate difficulty.

Junior Violoncello Certificate.

Successful candidates in the Junior Violoncello Examination, who have passed the Junior Theory Examination, will be awarded the Junior Violoncello Certificate of the University.

Marks will be awarded under the following heads in the Junior Violoncello Examination:—

	MAXIMUM.
Tone—quality and volume,	15
Technique, left hand,	15
Technique, bowing,	15
Rhythm, choice of tempo, phrasing, etc.,	15
Style, emotion, brilliancy (natural qualifications),	15
Sight reading,	15
Memory,	10

For particulars as to fees, see page 57.

Intermediate Grade.

NOTE.—Candidates must bring their own accompanist, their teachers being permitted to act as such.

Candidates will be required to prepare six studies and four pieces chosen from the following list, one piece being selected from each group:—

Studies.

DUPONT,
21 Exercises.

Pieces.

Group No. 1:—

POPPER,
Hungarian Rhapsody and Tarantelle, op. 33.

CASELLA,
Chanson Napolitaine.

SERVAIS,
Fantasie Caracteristique.

MAX BRUCH,
Kol Nidrei.

BACH,
Aria.

LALO,
Chants Russes.

Group No. 2:—

SERVAIS,
Concerto Militaire.
Souvenir de Spa.

RIES,
Grand duo on Russian Airs.

D'ERLANGER,
Andante Symphonique.

Group No. 3:—

RAFF,
Sonata.

BOELLMAN,
Sonata.

MOZART,
Sonata.

Group No. 4:—

LALO,
Concerto in D.

ROMBERG,
Concerto in No. 2.

GOLTERMAN,
Concerto in A minor.

SAINT-SAENS,
Concerto in A minor.

POPPER,
Concerto in E minor.

KLUGHARDT,
Concerto in A minor.

Technical Tests, etc.

Candidates must be prepared to play from memory the major and minor scales in thirds and sixths through one octave.

Technic of the Bow.

Sight Reading.

Candidates will be required to play at sight one quick and one slow movement of moderate difficulty.

Intermediate Violoncello Certificate.

Successful candidates in the Intermediate Violoncello Examination, who have passed the Intermediate Theory Examination, will be awarded the Intermediate Violoncello Certificate of the University.

Marks will be awarded under the following heads in the Intermediate Violoncello Examination:—

	MAXIMUM.
Tone—quality and volume,	15
Technique, left hand,	15
Technique, bowing,	15
Individuality, style (natural qualifications),	15
Interpretation, choice of tempo, phrasing, etc.,	15
Sight reading,	15
Memory,	10

For particulars as to fees, see below.

Table of Fees for Local Examinations.

NOTE.—Candidates' names (in the proper form of application) and fees must be in the hands of the Secretary of the Faculty on or before November 1st and May 9th. No application will be received after these dates.

The fees for certificates will be returned to unsuccessful candidates.

Theory:—

Junior	$2.00
Intermediate	3.00
Senior	4.00
Certificate in each grade	1.00

Pianoforte, Singing, Violin and Violoncello:—

Elementary Piano	$2.00
Primary	3.00
Junior	4.00
Intermediate	5.00
Teacher's Course	10.00
Certificate in each grade	1.00
Diploma in Teacher's Course	5.00

Organ:—

Junior	$4.00
Intermediate	5.00
Certificate in each grade	1.00

A duplicate of the marks awarded to a candidate in a practical subject by the examiner will be issued on payment of a fee of twenty-five cents.

HIGHER EXAMINATIONS.

For the Diploma of Licentiate in Music, University of Toronto (L. Mus., Tor.).

The Higher Examinations of the University are of a professional standard, and are also regarded by the University as a qualification for teaching.

The examinations for the diploma of Licentiate in Music, University of Toronto, will be held only at the University annually in June, and will be presided over by a specially appointed Board of Examiners.

Application must be forwarded to the Secretary of the Faculty on or before May 9th. The fees for examination and diploma must, in all cases, accompany the candidate's application for examination. The fee for diploma will be returned to unsuccessful candidates. The names and addresses of candidates should be written on the proper form of application, which may be obtained through the Secretary of the Faculty.

The examination for the diploma of Licentiate in Music shall be at least forty minutes in length.

Candidates who fail to pass the examination will be allowed to present themselves at a succeeding examination on payment of half the regular fee.

PIANOFORTE.

NOTE.—Before a diploma is granted all candidates must pass the University *Junior* and *Senior* Examinations (with honours) in the theory of music.

Candidates must be prepared to play eight numbers chosen from the following list of compositions: One number must be by Bach, one by Beethoven, one by Chopin, one by Schumann, and one by Liszt, the candidate being permitted freedom of choice in the remaining three numbers. One number must be prepared without assistance.

Licentiate Piano.

ARENSKY,
Third Suite (First piano part).

BACH, J. S.
Chromatic Fantasia and Fugue.
English Suite No. 3 in G minor (Peters' edition, vol. 203; Schirmer Library, No. 17).
Partita, No. 6 (Peters' edition, vol. 206, Schirmer Library, No. 21).
Fantasia and Fugue in A minor (Peters' edition, vol. 208).

BACH-BUSONI,
Prelude and Fugue in D major.
Violin Chaconne (transcription).

BACH-LISZT,
Prelude and Fugue in A minor.

BACH-TAUSIG,
Toccata and Fugue in D minor.

BARGIEL, W.
Suite in A minor, op. 21.

BEETHOVEN,
Fifteen Variations in E flat, op. 35.
Six Variations in D, op. 76.
Sonata in E flat, op. 27, No. 1.
Sonata in D, op. 28.
Sonata in C, op. 53.
Sonata in F minor, op. 57.
Concerto, No. 1, op. 15.
Concerto, No. 2, op. 19.
3rd Concerto, op. 37.
4th Concerto, op. 58.
5th Concerto, op. 73.

BRAHMS, J.
Scherzo in E flat minor, op. 4, and Clavierstücke, op. 118, Nos. 1, 2, and 3.
Variations and Fugue on a theme by Handel, op. 24.

CHOPIN, FR.
Andante Spianato and Polonaise, op. 22.
Allegro Maestoso.
Polonaise in A flat, op. 53.
Rondo, op. 1.
Ballade in G minor, op. 23.
Nocturne in G, op. 37, No. 2, and Etudes, op. 10, Nos. 2, 4 and 5.
Nocturne in C minor and Etudes, op. 25, Nos. 8, 9 and 11.
Concerto in F minor.
Concerto in E minor, op. 11, first movement or last two movements.
Sonata, op. 35, B minor.
Variations Brillantes, op. 12.
Polonaise, op. 44.

DVORAK, A.
Poetical Tone Pictures, op. 85.
Theme with Variations, op. 36.

FRANCK, C.
Prelude, Choral and Fugue.
Prelude, Aria and Finale.

GRIEG,
Ballade in G minor, op. 24.
Concerto in A minor, op. 16.

GLAZOUNOW, A.
First Sonata, op. 74.

GROENDAHL, A. BACKER
Etudes de Concert, op. 47, Nos. 1, 2 and 3.

HENSELT, A.
Concert Variations, E major, op. 1.

HILLER, F.
Concerto F sharp minor.

JENSEN, AD.
Erotikon, op. 44, Nos. 3 and 4.

LIAPOUNOW, E.
Tarantelle, op. 25.

LISZT, FR.
Erl-King (Schubert), and Polonaise in E.
Etudes d'execution transcendante, Nos. 4 and 5; 8 and 9; 11 and 12.
Ballade in B minor.
Concerto in A major.
Concerto in E flat.
Tarantella from Venezia e Napoli.
Rhapsodies Hongroises, No. 2, No. 12, No. 14.
Tannhäuser March (Wagner).
Etude in F minor.
Harmonies du Soir.
Rhapsody, No. 9.
Benediction du Dieu dans la Solitude.
Hungarian Fantasie (Primo).

LISZT-GOUNOD,
Faust Valse.

MACDOWELL, E. A.
Sonata in G minor (Eroica), No. 2, op. 50, Movements 1 and 2; 3 and 4.
Sonata Tragica (any two movements).
Keltic Sonata (any two movements).

MENDELSSOHN, F. B.
Prelude and Fugue in E minor, op. 35.
Variations Serieuses, op. 54.
Concerto in G minor.
Three Caprices, op. 33 (any two).
Scherzo e Capriccio.
Concerto in D minor.

MOSZKOWSKI, M.
Valse in E major, op. 34, No. 1.
Caprice Espagnol, op. 37.
Concerto in E major (first movement).
Scherzo Valse, Boadbil.
Etude de Concert, op. 48, No. 1 or No. 2.
Pensées Fugitives, op. 66.
Les Vagues, op. 24.
Barcarolle, op. 27.

MOZART, W. A.
Concerto in D minor, complete with Reinecke Cadenza to last movement.

PADEREWSKI, I. J.
Introduction and Toccata, op. 6.
Thème Varié, op. 16, No. 3.

PAGANINI-LISZT,
La Campanella.
Capriccio in E flat.

RAFF, J.
Suite, G minor, op. 163.
Le Galop, op. 104.
Concerto C minor, op. 185.

RAVEL, MAURICE
Jeux d'eau.

RUBINSTEIN, A.
Staccato Etude.
Concerto in D minor (any two movements).
Polonaise (LeBal).
Concert Etude in C.

SAINT-SAENS, C.
Caprice in G (Alceste de Gluck).
Concerto in G minor (any two movements).
Variations sur un thème de Beethoven, op. 35.
Scherzo for two pianos (Primo), op. 87.

SAUER,
Octave Study in E major.

SCHARWENKA,
Theme and Variations, op. 48.

SCHUBERT, F.
Fantasia in G, op. 78.
Sonata in C minor.
Fantasia, op. 15, Wanderer Fantasia.

SCHUBERT-TAUSIG,
Marche Militaire.

SCHUMANN, R.
Papillons, op. 2.
Carnival, op. 9.
Etudes Symphoniques, op. 13, Thème with any four Etudes.
Kriesleriana, op. 16, Nos. 1, 2, 3 and 4.
Fantasia, op. 17.
Sonata in F sharp minor, op. 11.

SCHLOEZER, PAUL DE
Deux Etudes de Concert, op. 1. Either (Cranz edition).

SGAMBATI, G.
Vecchio Menuetto and Toccata, op. 18.

SINDING, CH.
Fatum, Variations in C minor, op. 94.

SMETANA, F.
Concert Etude, op. 17.

STRAUSS-SCHUETT,
Kiss Valse, transcription.
Fledermaus Valse, transcription.

TSCHAIKOWSKI, P.
Concerto in B flat minor, first movement. Second and third movements.
Polacca de Concert, op. 72, No. 7.

TANYEFF,
Flower Waltz.

TSCHAIKOWSKI-PAPST,
Concert Paraphrase on Eugen d'Onegin.

WEBER, C. M. VON
Concertstück, op. 79.
Sonata in A flat, op. 39.
Sonata in D minor, op. 49.

Technical Tests, etc., in Higher Piano Examination.

Candidates must be prepared to play with accurate fingering, and from memory, the following tests:—

SCALES.—All major, minor and chromatic scales, legato and staccato, similar motion, with hands together. Major and minor scales, similar motion, separated by a third, a sixth and a tenth, compass four octaves. Major and harmonic scales in contrary motion. Legato scales to be played, with and without accents, in quarter, eighth and sixteenth notes, staccato scales in quarter and eighth notes only.

=176, hands separately,

=138, hands together.

Chromatic scales,

=168, hands separately.

=126, hands together.

All major and harmonic minor scales in double thirds and double sixths, in quarter and eighth notes, hands together.

=108.

CHORDS.—All major and minor common chords, solid and broken, with inversions, four note form; all dominant and diminished seventh chords, with inversions, solid and broken. Solid chords with arm strokes. Broken chords in quarter, eighth and sixteenth notes.

=132.

ARPEGGIOS.—Arpeggios formed of all the major and minor common chords; the dominant seventh and diminished seventh chords with inversions, through a compass of four octaves with hands separately, and with hands together, one octave apart.

=160, hands separately.

=138, hands together.

OCTAVES.—Major, minor and chromatic scales in similar motion. The arm strokes and legato, in quarter and eighth notes; wrist staccato in quarter, eighth and sixteenth notes.

=100.

TRANSPOSITION.—Candidates will be required to transpose at sight to any given key, a simple hymn tune.

SIGHT READING.—Candidates will be tested in sight playing.

PLAYING FROM A FIGURED BASS.—Candidates will be required to play at sight from a figured bass, adding three upper parts.

EAR TEST.—Candidates must be prepared to sing the major and minor scales, and any interval with the compass of the octave. If unable to sing, the candidate must recognize the intervals when played on the piano by the examiner (the keyboard not to be seen by candidate).

SIGHT SINGING.—Candidates will be required to sing at sight a melody, major or minor, with various modulations and chromatic intervals.

Marks will be awarded separately for the playing of the pieces and the technical tests, in each of which the candidates must obtain at least 60 per cent.

Candidates passing in one part of the examination, but failing in the other, although 60 per cent. of the total combined number of marks may have been obtained, will be required to present themselves for a supplemental examination on that part of the examination in which they may have failed. The fee for this supplemental examination will be ten dollars.

Marks will be awarded under the following heads:—

Scales, chords, arpeggios, octaves.

Accurate observance of notation, rests, etc., and correctness of fingering.

Phrasing, accent, and interpretation.

Discretion in use of pedal.

Quality of touch, and variety and graduation of tone.

Choice of time and steadiness of tempo.

Musicianship as displayed in self-prepared number and in the examination work generally.

Memory playing.

Sight reading.

Sight singing.

Playing from a figured bass.

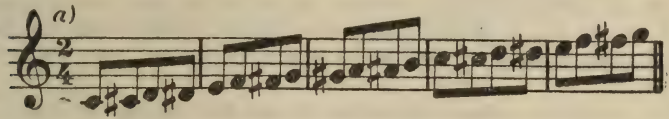
Transposition.

For particulars as to fees, see page 76.

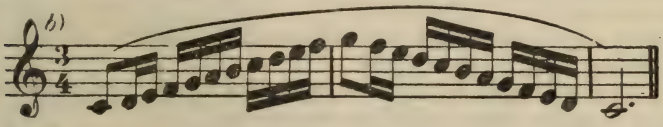
SINGING.

Before a diploma is granted, candidates must pass the Junior and Senior Examinations (with honours) in the Theory of Music.

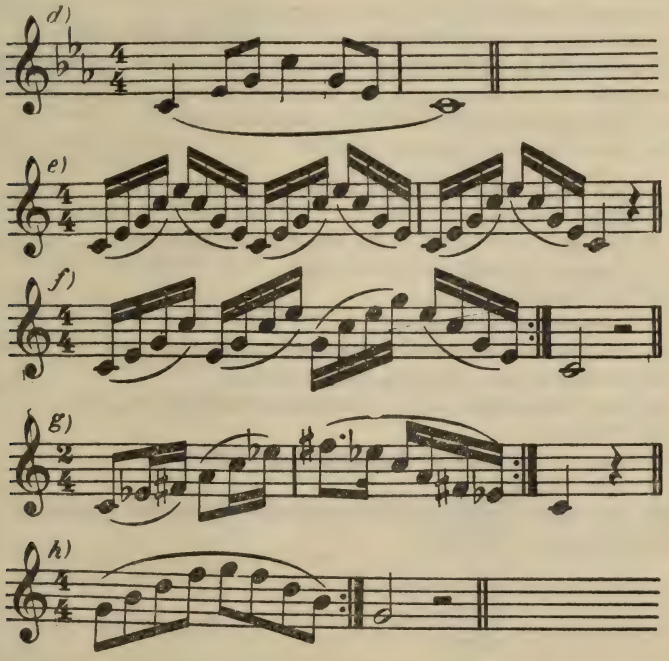
Candidates must be prepared (1) to sing any major, minor (melodic and harmonic) and chromatic scale; also scale passages from a given keynote, thus:—



and *descending* in the same way.



(2) To sing arpeggios of the major and minor common chord and their inversion, and of the dominant and diminished sevenths from a given note. See the following examples:—



(All these examples may be transposed to suit the compass of the voice).

(3) To sing any interval above or below any given note.

(4) To vocalize four studies of different character, two of which must be in a minor key, selected from Panseron—40 Vocal Exercises (high), Part II, any numbers (Novello). 42 Vocal Exercises (low), Part II, any numbers except 31, 36 (Novello). Panofka—12 Vocalizes, op. 86 (high or medium), any numbers except 1, 2, 6 (Augener 6809). 24 Vocalizes, op. 81 (in editions for high, medium, or low voices), any numbers except 8, 9, 10, 12, 14, 16 (Ricordi's special edition). Concone—15 Vocalises, op. 12 (high, medium or low), any numbers; 40 Lessons (low), 20, 29, 32, 36, 37, 38.

(5) To sing four songs from the lists (*a*) and (*b*)—two from each list.

(6) To sing two selections from the oratorio and two from the operatic lists respectively.

(7) To sing two recitatives selected from groups (*a*) and (*b*)—one from each group.

(8) To sing at sight, (i) an unaccompanied melody; (ii) a portion of a song of moderate difficulty with accompaniment.

(9) To sing and play the accompaniment of any solo given in the list for the Junior Local Examinations in Singing, and previously prepared by the candidate.

Candidates must bring their own accompanists.

Candidates may transpose numbers to any key suitable to the voice.

All candidates have the option of singing the words of their solos either in the original language or in the English translation of the same, but credit will be given for efficiency in foreign languages.

For particulars as to fees, see page 76.

Marks will be awarded under the following heads:—

(1) Voice production.
(2) Accuracy as to tempo in the selected songs and studies.
(3) Management and control of breath.
(4) Time and rhythm.
(5) Correctness of intonation.
(6) Precision and neatness in attacking and leaving notes.
(7) Variety of tone, phrasing and expression.
(8) Style and correctness in recitative performance.
(9) Flexibility.
(10) Distinctness and correctness of pronunciation.
(11) Sight singing.
(12) Satisfactory rendering of the prepared song and the candidate's own accompaniment to the same.

Licentiate.

Soprano.

Songs.

ALLITSEN,
"The Lute-Player."

ARIOSTO,
"Like some frail Barque."

AUSTIN,
"Margaret."

BEETHOVEN,
"Song of Penance."
"Busslied."

BISHOP,
"Lo! Here the Gentle Lark."
"By the Simplicity of Venus' Doves."

BRAHMS,
"Meine Liebe ist grün," op. 63, No. 5.
"O wüss t'ich doch 'den Weg zurück," op. 63, No. 8.

CHAMINADE,
"Dreams."

CLUTSAM,
"Six Songs from the South" (any two).

COATES, ERIC
"Four Old English Songs" (any two).

COLERIDGE-TAYLOR,
"Sons of the Sea."

COWEN, F.
"O Skylark! for thy Wing."

DEBUSSY,
"Chansons de Bilitis."

DELIUS,
"In the Garden of the Seraglio."

DRAPER, C. F.
"A Song in the Woods."

GRIEG,
"Vom Monte Pincio," op. 39, No. 1

HAYDN,
"Cherchez au Village," from "La vera Constanza."

MACCUNN, H.
"Heavy thy Burden."
"Fire of Heaven, whose strong Arrow."

MALLINSON,
"Apple-Blossom."

MASSENET,
"Les Mères."

PARKER, H.
"A spinning Song."

PARRY,
"Love is a Babble." } as one
"Marion." } number.

SCHINDLER,
"Eloi, Eloi lama Sabachthani" (Schirmer).

SCHUBERT,
"Margaret at the Spinning-Wheel."
"The Erl-King."

SCHUMANN,
"The Ring," op. 42, No. 4.

SCOTT, CYRIL,
"Daphnis and Chloe."

SIBELIUS,
"The Song of the Roses."

THOMAS, GORING
"A Song of Sunshine" (Cramer).
"Polacca." (Boosey).

TSCHAIKOWSKY,
"Pauline's Romance."

WALTHEW,
"What is it calls?" (Boosey).

Oratorio.

BENEDICT,
"I mourn as a Dove" (St. Peter).

BENNETT, W. S.
"I will love thee, O Lord" (The Woman of Samaria).

COSTA, M.
"I will extol Thee" (Eli).

ELGAR,
"Be not extreme" (The Light of Life).

GADE, NEILS W.
"They softly sleep" (The Crusaders).

HANDEL, G. F.
"Endless Pleasure, endless Love" (Senela).
"Farewell! ye limpid Streams" (Jeptha).

HAYDN, J.
"On mighty Pens" (Creation).

MENDELSSOHN,
"Hear ye! Israel" (Elijah).
"Jerusalem, thou that killest the Prophets" (St. Paul).

RUBINSTEIN,
"Once more has Heaven" (Paradise Lost).

SPOHR,
"When this Scene of Trouble ceases" (Calvary).

SULLIVAN,
"Where have they laid Him?" (The Light of the World).

VERDI,
"Now the Record" (Requiem).

Opera.

BIZET,
"Je dis que rien ne me pouvante" (Carmen).

GOUNOD,
"Plus grand, dans son obscurité" (La Reine de Saba).

MASCAGNI,
Romanza, "Voi lo sapete, O Mamma" (Cavalleria Rusticana).

PUCCINI,
"Se come voi piccina io fossi" (Le Villi).
"One fine Day" (Ricordi) (Madam Butterfly).

ROSSINI,
"Bel Raggio" (Semiramide).
"Selva Opaca" (Guillaume Tell).

VERDI,
"Ave Maria" (Otello).
"Caro nome" (Rigoletto).

WAGNER, R.
"Elsa's Dream" (Lohengrin).

WEBER, C. M.
"Piano, piano, canto pio" (Der Freschutz).

WOLF-FERRARI,
"Cannetella" (The Jewels of the Madonna).

Contralto.

Songs.

BACH,
"Jesus Sleeps."

BANTOCK, GRANVILLE
"Serenade" (Jester Songs, No. 5).
"Song of the Genie."

BOYCE,
"Tell me gentle Shepherd."

BRAHMS,
"Faithfulness," op. 3.

BURLEIGH, H. T.
"The Soldier."

CHADWICK,
"O Love stay by and sing."

CHAMINADE,
"Espoir" (Hope).

COLERIDGE-TAYLOR,
"The Soul's Expression."
"Sorrow Songs" (any two).

DE PINNA,
"Gaily chant the summer Birds."

DVORAK,
"Clouds and Darkness" (Biblical Songs).

ELGAR,
"Sea Slumber-Song."

GOUNOD,
"The golden Thread."

GRIEG,
"Autumn Storms."

LOEWE,
"The Bell-ringer's Daughter."

MACKENZIE, A. C.
"To crown my Love."

MALLINSON,
"Thick is the Darkness."
"The blood-red Ring."

MASCHERONI,
"Serenata Veneziana."

PARRY, HUBERT
"Sleep."
"Noble of Air."

RANDEGGER,
"Mother's Song." } as one number.
"Stay, Stay." }

RUBINSTEIN,
"Morning-Song."

SAINT-SAENS,
"La Cloche."

SCHUBERT,
"Mine."

SCHUMANN,
"Jephtha's Daughter."

SCOTT, CYRIL,
"A Birthday." } as one number.
"Autumn." }

Oratorio.

BACH, J. S.
"Prepare thyself, Sion" (Christmas Oratorio).
"Grief and Pain" (St. Matthew's Passion).

DVORAK, A.
"Inflammatus" (Stabat Mater).

ELGAR, E.
"Angel's Farewell" (Dream of Gerontius).

HANDEL, G. F.
"He was despised" (Messiah).
"O thou that tellest good Tidings to Zion" (Messiah).

SAINT-SAENS, C.
"Thou, O Lord" (The Heavens Declare).
"Dear Lord thine Aid" (Samson and Delilah).

SMART, H.
"Be thou patient" (Jacob).

Opera.

BIZET,
"Habanera" (Carmen).

FLOTOW,
"Esser mesto" (Marta).

GLUCK,
"Divinités du Styx" (Alceste).
"Che farò senza Euridice" (Orfeo).

MASSE,
"Dans le bois à ma voix" (Paul Virginie).

MEYERBEER,
"Lieta Signor" (Gli Ugonotti).

ROSSI,
"Ah! Rendimi."

ROSSINI,
"Tu che accendi queste core—Ditant palpiti" (Tancredi).

THOMAS, A. GORING
"My Heart is Weary." (Nadeschda)

VERDI, G.
"Stride la vampa" (Trovatore).

WEBER, C. M.
"Donzella nata in Sen" (Oberon).

Tenor.

Songs.

AYLWARD,
"Love's Benediction."
"O Moonlight deep and tender." } as one number.

BALTZELL, W. J.
"Thou art mine."

BEACH, MRS. H.
"Empress of the Night." } as one
"Exaltation." } number.

BEETHOVEN,
"Adelaide."

BERLIOZ,
"The unknown Land."

BREWER, H.
"The Morris Dance." (Novello).

CHAMINADE,
"The Bird's Noel."

CHERUBINI,
"Sweet are the Banks" (Les deux Journées).

COLERIDGE-TAYLOR,
"Onaway, awake! Beloved."

DEKOVEN,
"For this."

DVORAK,
"Hear my Prayer" (Biblical Songs).

FESCH, W. D.
"To fai la superbetta."

FOOTE,
"Roses in Winter." } as one
"Thistle-down." } number.

HOLBROOKE, J.
"Come, let us make Love deathless."

LEHMANN, L.
"Ah! Moon of my Delight."

RAFF,
"Riccio's last Song."

ROBINSON, J.
"The snowybreasted Pearl" (Chappell).

RONALD, LANDON
"Come into the Sun."

SALVATOR, ROSA
"To be near thee" (Star vicino al bell'Idol).

STANFORD,
"A Message to Phyllis."

SULLIVAN, A.
"Come, Margarita, come." (The Martyr of Antioch).

TOSTI,
"Barcarolle."

WOODFORDE-FINDEN, A.
"Indian River Song."
"Indian Desert Song."
"Reflections."

Oratorio.

BACH,
"Haste, ye Shepherds" (Christmas Oratorio).

GADE, NIELS W.
"With holy Thoughts seek holy Things" (The Crusaders).

HANDEL, G. F.
"Thou shalt dash them" (Messiah).

HAYDN,
"The Traveller stands perplexed" (The Seasons).

MENDELSSOHN,
"I will sing of thy great Mercies and Power" (St. Paul).

PARRY, C. H. H.
"God breaketh the Battle" (Judith).

ROSSINI, G.
"Cujus animam."

STAINER, J.
"My Hope is in the Everlasting" (Daughter of Jairus).

SULLIVAN,
"Refrain thy Voice from weeping" (The Light of the World).

Opera.

BIZET,
"La Fleur que tu m'avais jetée," (Carmen).

DONIZETTI,
"Spirito gentil" (La Favorita).

MASCAGNI,
"Siciliana" (Cavalleria Rusticana).

MOZART, W. A.
"Dalla sua pace" (Don Giovanni).

PADEREWSKI, I. J.
"As the ardent singer" (Manru).

PUCCINI,
"E lucevan le Stelle" (Tosca).

THOMAS,
"O Vision entrancing" (Esmeralda).

VERDI, G.
"Celeste Aida" (Aida).
"Questa o quella" (Rigoletto).

WAGNER, R.
"In fernem Land" (Lohengrin).
"Spring Song" (Walküre).

Baritone and Bass.

Songs.

ALLITSEN,
"King Duncan's Daughter."

ARNOLD,
"Anacreon."

BACH,
"O blessed Flock." (Chappell).

BANTOCK, G.
"Serenade" (Jester Songs, No. 5).

CARISSIMI,
"Victorious my Heart is." (Vittoria! Mio core).

CHAMINADE,
"Couplets Bacchique."

COWEN, F. H.
"A Border Ballad."

ELGAR,
"The Pipes of Pan."

ELLIOTT, J. W.
"Hybrias the Cretan,"

HANDEL,
"Who plays among the Roses" (Imeneo).
"O ruddier than the Cherry."

KORBAY,
"Marishka."
"Had a Horse."

MALLINSON,
"We sway along."

MARTINI,
"Plaisir d'amour."

MENDELSSOHN,
"I'm a Roamer."

PURCELL,
"What shall I do?" (Novello).

SPOHR,
"Tears of Sorrow." (Novello).

STANFORD, C. V.
"Prospice."

SULLIVAN,
"O Swallow, Swallow."

WALKER, E.
"Corinna's going a-Maying."

WEIDT,
"Watchman's Song."

WHITE, M.,
"Montrose Love Song."
"Crabbed Age and Youth."
"Un Facheux" } as one
"L'Amour fait ici" } number.

WILLEBY,
"Corrymeela."
"Garden Song."

WILLIAMS, VAUGHAN
"The Vagabond" (Boosey).
"The Roadside Fire."

WOOD HAYDEN
"Breezy Ballad." } as one
"Hidden Pearls." } number.

Oratorio.

BACH,
"Mighty Lord and King all glorious" (Christmas Oratorio).

COSTA,
"Arise, O Lord" (Naaman).

HANDEL, G. F.
"The Lord worketh Wonders" (Judas Maccabaeus).
"Thy glorious Deeds" (Samson).
"Shall I in Mamre's fertile Plain" (Joshua).

MACKENZIE,
"Unto my Charger" (The Rose of Sharon).

MENDELSSOHN, F.
"It is enough" (Elijah).
"Consume them all" (St. Paul).

PARRY, C. H. H.
"In the still Watches of the Night" (King Saul).

ROSSINI, G.
"Pro peccatis" (Stabat Mater).

VERDI,
"From the Accursed" (Requiem).

Opera.

BEETHOVEN, L. VAN
"There's nought on Earth like Gold." (Fidelio).

GOUNOD,
"She alone charmeth my Sadness" (La Reine de Saba).

MASSENET,
"Vision fugitive" (Herodiade).

MOZART, W. A.
"Qui sdegno non s'accende" (Il Fluto Magico).
"Deh Vieni" (Don Giovanni).

NESSLER,
"Es hat nicht sollen sein" (Der Trompeter von Säckingen).

ROSSINI, G.
"Largo al factotum" (Il Barbiere di Seviglia).

SULLIVAN,
"Woo, thou, thy Snowflake" (Ivanhoe).

VERDI,
"Il balen" (Il Trovatore).
"Il lacerato spirito" (Simon Boccanegra).
"Eri tu" (Un Ballo in Maschera).

Recitative.

Soprano.

List (a)—

HANDEL,
"No more in Zion" (Judas Maccabaeus).
"Ye sacred Priests" (Jeptha).
"'Twas at the Royal Feast" (Alexander's Feast).

HAYDN,
"And God said" (Creation).

List (b)—

BEETHOVEN,
"Thou monstrous Fiend" (Abscheulicher). Finale, Act I., Fidelio.

SPOHR,
"Hast Thou for me a Look a Thought." (Calvary).

VERDI,
"E Strano!" (La Traviata).

WEBER,
"Ocean, thou mighty Monster" (Oberon).
"Come una volta il sonno" (Der Freischütz).

Contralto.

List (a)—

HANDEL,
"See, she blushing turns her Eyes" (Semele).

HANDEL,
"Great Prophetess, my Soul's on fire" (Deborah).

HANDEL,
"Armida, dispietata" (Rinaldo).

List (b)—

MERCANDANTE,
"Ah! s'estinto" (Donno Caritea).

ROSSINI,
"Eccomi alfine" (Semiramide).

THOMAS, A. GORING
"What Means Iram, he speaks Shame" (Nadeschda).

VACCAI,
"E questo il loco?" (Romeo and Juliet).

Tenor.

List (a)—

HANDEL,
"Comfort ye" (Messiah).

HANDEL,
"Tyrannic Love" (Susanna).

List (b)—

BRAGA,
"Bella de suo sorriso" (Reginella).

VERDI,
"De'miei bollenti Spiriti" (La Traviata).

Baritone and Bass.

List (a)—

BACH,
"Before the Father, Our Redeemer falling" (St. Matthew).

HANDEL,
"I'll hear no more" (Esther).

HANDEL,
Thus said the Lord" (Messiah).

List (b)—

VERDI,
"Pari siamo" (Rigoletto). The first portion only, in the key of F, Act I., Scene 7.

VERDI,
"Tace la Notte" (Il Trovatore).
"The last Farewell I bid thee" (Simon Boccanegra).

ORGAN.

NOTE.—Before a diploma is granted all candidates must pass the University *Junior* and *Senior* Local Examinations (with honours) in the Theory of Music, and the Intermediate Local Examination in Piano Playing.

Candidates must be prepared to play ten pieces selected from the following list, one of which must be by Bach, one by Mendelssohn, one by Guilmant, one by Rheinberger, and one by Widor, the candidate being allowed freedom of choice in the remaining five numbers. One number must be prepared without assistance:—

Licentiate Organ.

BACH, J. S.
- Sonata in C minor, Novello's edition, Bk. IV.
- Sonata in E minor, Novello's edition, Bk. V.
- Passacaglia in C minor, Novello's edition, Bk. X.
- Fantasia and Fugue in G minor, Novello's edition, Bk. VIII.
- Prelude and Fugue in E minor, Novello's edition, Bk. VIII.
- Prelude and Fugue in B minor, Novello's edition, Bk. VII.
- Toccata and Fugue in D minor (Dorian), Novello's edition, Bk. X.
- Prelude and Fugue in D major, Novello's edition, Bk. VI.

BEST, W. T.
- Fantasia in E minor, Augener's edition, 8,705.

BUXTEHUDE, D.
- Fantasia, Prelude and Fugue (Cranz).

CHIPP, E. T.
- Variations on "God preserve the Emperor."

ELGAR, E
- Sonata in G. Breitkopf & Härtel edition.

FINCK,
- Fest Praeludium, op. 63.
- Sonata, E flat, op. 6.

FRANCK, C.
- Chorale in E, No. 1,
- Chorale in A minor, No. 3.

GIGOUT, E.
- Grand Choeur Dialogue.

GUILMANT, A.
- Sonatas Nos. 1; 7; 8. Any one.
- Caprice in B flat, op. 20, and Marche aux Flambeaux, op. 59, No. 1.
- Prelude, Theme, Variations and Finale, op. 24.

HANDEL-BEST,
- Concerto, No. 2, in B flat, Novello.
- Concerto, No. 4 in F.

HARWOOD, BASIL
- Dithyramb.
- Paean.
- Capriccio.
- Sonata in C sharp minor, op. 5. Breitkopf & Härtel ed.

LEMARE, E. H.
- Fantasia on the tune "Hanover."
- Symphony in G minor.
- Fantasia and Fugue in G minor.

LISZT, F.
- Fantasia and Fugue on the name of Bach.

LISZT-FRICKER,
- Fugue on "Ad nos, ad salutarem undam," Breitkopf & Härtel edition.

MENDELSSOHN, F. B.
- Sonata No. 1 in F minor.
- Prelude and Fugue in C minor, No. 1.

MERKEL, G.
- Variations on a theme of Beethoven, op. 45.
- Sonata No. 7 in A minor, op. 140.
- Sonata No. 8 in B minor, op. 178.
- Sonata No. 9 in C minor, op. 183.

MOZART-BEST,
- Fantasia in F minor, Novello.

NOBLE, T. T.
- Theme with variations in D flat, Augener's edition, 5,816.

PARRY,
- Fantasia and Fugue in G.

PIUTTI, C.
- Prelude and Fugue, op. 16.

REGER, MAX.
- Introduction and Passacaglia.

REUBKE, J.
Sonata in C minor.

RHEINBERGER, J.
Sonata No. 7 in F minor, op. 127.
Sonata No. 8 in E minor, op. 132.
Sonata No. 12 in D flat, op. 161.
Sonata No. 17 in B, op. 181.
Sonata No. 20 in F, op. 196.

SAINT-SAENS, C.
Three Rhapsodies. Any one.

SALOME, TH.
Sonata, C minor, op. 25.

SMART, HENRY
Fantasia with Chorale in G.
Air with variations in A.
Choral with variations in E flat.

SCHUMANN, R.
Six Fugues, Any one. Novello.

THIELE, L.
Concert satz in E flat.
Chromatic Fantasia and Fugue.
Theme with variations in A flat.

WESLEY, S. S.
Variations on "God save the King."

WEST, J. E.
Sonata in D minor. Novello.
Song of Triumph. Novello.

WIDOR, C. M.
Fifth Symphony, First movement with any other two movements.
Sixth Symphony, First movement with any other two movements.

WILLAN, HEALEY
Introduction, Passacaglia and Fugue.

WOLSTENHOLME, W.
Sonata No. 1 in F.

Candidates must be prepared to play major and minor scales throughout the whole length of the key-board, and arpeggios of the dominant and diminished sevenths over full compass of pedal board; to modulate from one key to another; to harmonize a given melody, to play at sight an organ piece; to transpose at sight a given hymn tune or choral; to read at sight vocal score of four parts; to add three parts to a given figured bass; to extemporize upon a given theme; to sing at sight a given melody, and to answer questions in organ construction, tuning, pitch and quality of stops.

Marks will be awarded under the following headings:—

Accuracy as to notes, rests, etc.
Independence of action between hands and feet.
Touch—legato, clear part playing, etc.
Choice and management of stops.
Phrasing.
Strictness and choice of tempo.
Modulation.
Harmonizing a given melody.
Sight reading.
Sight reading in vocal score.
Transposition.
Harmonizing a given figured bass at sight.
Sight singing.
Questions on organ construction, etc.

For particulars as to fees, see page 76.

VIOLIN.

Candidates must bring their own accompanists.

Before a diploma is granted, all candidates must pass the University *Junior* and *Senior* Examinations (with honours) in the Theory of Music, and must also pass the Primary Piano Examination.

Candidates will be required to prepare eight pieces chosen from the following list, one piece being selected from each one of the 1st, 2nd, 4th, 5th, and 6th groups, and three pieces from group 3:

Pieces.

Group No. 1:—

WIENIAWSKI,
2nd Concerto.

LIPINSKY,
Concert Militaire.

VIEUXTEMPS,
Concertos (any one).

PAGANINI,
Concerto in E flat.

ERNST,
Concerto in F sharp minor.

Group No. 2:—

MENDELSSOHN,
Concerto.

BRUCH,
Concerto in G minor.

BEETHOVEN,
Concerto.

GODARD,
Concerto in A minor.

BRUCH,
Scottish Fantasia.

SPOHR,
Concertos Nos. 2, 7, 8, 9, 11 (any one).

Group No. 3:—

SARASATE,
Spanish Dances.

SARASATE,
Zigeunerweisen.

WIENIAWSKI,
Airs Russes.

SAINT-SAENS,
Rondo capriccioso.

BRAHMS-JOACHIM,
Hungarian Dances (any one).

PAGANINI,
Caprices (edited by Kreisler).
La Campanella.

DAVID,
Scherzo capriccioso.

BAZZINI,
La Rondo de Lutins.

GUIRAUD,
Caprice.

HUBAY,
The Zephyr.

Group No. 4:—

CHOPIN-SARASATE,
Nocturne in E flat.

CHOPIN-WILHELMJ,
Nocturne, op. 27, No. 2.

WAGNER-WILHELMJ,
Siegfried Paraphrase.

VIEUXTEMPS,
L'orage, op. 22, No. 6.

SAURET,
Farfalla.

SARASATE,
Introduction and Caprice Jota.

Group No. 5:—

BACH,
Sonatas for Solo Violin, Nos. 1, 3, 4 (any one).

TARTINI,
Le Trille de Diable.

Group No. 6:—

BACH,
Sonatas Nos. 3, 6, 7, 8, 9, 10 (any one).

BEETHOVEN,
Sonatas for Piano and Violin (any one).

Sonatas by *Schumann*, *Grieg*, *Rubinstein*, *Rheinberger*, *Schuett*, *Sinding* or *Brahms* (any one sonata).

SIGHT READING.

Candidates will be required to play at sight, three movements of different character and of moderate difficulty.

Marks will be awarded under the following heads:—

Tone—quality and volume.

Technique, left hand.

Technique, bowing.

Individuality, style and natural qualifications.

Interpretation, phrasing, tempi, etc.

Sight reading.

Memory.

For particulars as to fees, see page 76.

DIPLOMA VIOLONCELLO.

Candidates must bring their own accompanists.

Before a diploma is granted, all candidates must pass the University *Junior* and *Senior* Examinations (with honours) in the Theory of Music.

Candidates will be required to prepare four pieces chosen from the following list:—

Group No. 1:—
BACH,
Sonatas.

Group No. 2:—
BRAHMS,
Sonata.

BRAHMS,
Hungarian Dances.

PIATTI,
12 Capriccios.

SERVAIS,
6 Caprices, No. 11.

Group No. 3:—
ROMBERG,
1st, 4th, 6th (Peters' edition), 9th (Klengel) Concertos.

Group No. 4:—
DAVIDOFF,
Concerto B minor.
Concerto A minor.

SERVAIS,
Concerto B minor.

D'ALBERT,
Concerto C major.

DVORAK,
Concerto B minor.

PIATTI,
Concerto D minor.

VOLKMAN,
Concerto.

SCHUMANN,
Concerto A minor.

MOLIQUE,
Concerto (Klengel).

HAYDN,
Concerto D major (Gavert).

The candidate will be required to play at sight a piece of chamber music of moderate difficulty and to execute the violoncello part in any one of Beethoven's or Schubert's Quartettes.

Marks will be awarded under the following heads:—

Tone—quality and volume.

Technique, left hand.

Technique, bowing.

Individuality, style and natural qualifications.

Interpretation, phrasing, tempi, etc.

Sight reading.

Memory.

For particulars as to fees, see page 76.

Fees for Higher Examinations for Diploma of Licentiate in Music, University of Toronto.

NOTE.—Candidates' names (on proper forms of application) must be in the hands of the Secretary of the Faculty on or before May 9th. No application will be received after this date.

Candidates who, after paying the required fees, do not present themselves, or who fail to pass, may, upon presenting a valid excuse, be allowed the privilege of entering upon the succeeding examination on payment of half the regular fee. The fee for diploma will be returned to unsuccessful candidates.

Fee for examination	$20.00
Diploma	5.00

CURRICULUM IN MUSIC.

Degree of Bachelor of Music.

The degree of Bachelor of Music (Mus. Bac.) will be conferred by the University of Toronto upon students of music, on compliance with the requirements of the curriculum in music which may from time to time be prescribed by the Senate.

Matriculation.

The subjects for matriculation in Music are English and two of: Greek, Latin, German, French.

A candidate for the degree of Bachelor of Music must complete his matriculation prior to admission to the examination of the final year.

The pass standard is the same as that for pass Junior Matriculation.

A candidate who has obtained the average of sixty per cent. on all the six papers but has failed to obtain forty per cent. in at most two of these papers may complete Junior Matriculation by passing on these papers at any one subsequent examination.

A candidate who has obtained forty per cent. on each of at least four papers, with an average of sixty per cent. on the same, will be credited with these papers. In order to complete his Matriculation, he must obtain at one subsequent examination, forty per cent. on each of the remaining papers, with an average of sixty per cent.

A candidate who is actually engaged in a mercantile, industrial or other occupation may proceed to pass Matriculation under special conditions to be found in the Curriculum for Junior Matriculation.

I. ENGLISH.

COMPOSITION: An essay on one of several themes set by the examiners. In order to pass in this subject, legible writing, correct spelling and punctuation, and idiomatic and grammatical construction of sentences are indispensable. The candidate should also give attention to the structure of the whole essay, the effective ordering of the thought, and the accurate employment of a good English vocabulary. About two pages of foolscap is suggested as the proper length for the essay; but quality, not quantity, will be mainly regarded.

One examination paper.

LITERATURE: Such questions only will be set as may serve to test the candidate's familiarity with, and intelligent and appreciative comprehension of, the prescribed texts. The candidate will be expected to have memorized the passages prescribed below. In addition to the questions on the prescribed selections, others will be set on a "sight passage" to test the candidate's ability to interpret literature for himself.

The candidate shall produce satisfactory proof, by the certificate of the principal of the school from which he comes or otherwise, that he has read carefully, during the preceding year, at least four suitable works in English literature (both prose and poetry) in addition to those prescribed below for examination.

One examination paper.

1920: Tennyson, The Lady of Shalott, St. Agnes' Eve, "Come not when I am dead," "Break, break, break," In the Valley of Cauteretz, In Memoriam, XXXI, XXXII, XXXVI, LXXV, LXXVI, C, CXI; Browning, "All service ranks the same with God," The Italian in England, Cavalier Tunes, My Last Duchess, The Boy and the Angel, Home Thoughts from Abroad, Up at a Villa, The Guardian Angel, Prospice; Matthew Arnold, Sohrab and Rustum; Shakespeare, Macbeth.

Passages for memorization: Tennyson, The Lady of Shalott, Part I, St. Agnes' Eve, "Break, break, break", In the Valley of Cauteretz; Browning, "All service ranks the same with God", Home Thoughts from Abroad, Prospice, Love Among the Ruins.

MACBETH.

Act I, Sc. 5, ll. 16-31. LADY M. Glamis thou art . . . crown'd withal.
Act I, Sc. 7, ll. 1-28. MACB. If it were done . . . on the other.
Act II, Sc. 1, ll. 33-64. MACB. Is this a dagger . . . to hell.
Act III, Sc. 2, ll. 4-26. LADY M. Nought's had . . . him further.
Act III, Sc. 2, ll. 45-56. MACB. Be innocent . . . go with me.
Act V, Sc. 3, ll. 22-28. MACB. I have lived . . . dare not.
Act V, Sc. 3, ll. 39-45. MACB. Cure her . . . the heart?
Act V, Sc. 5, ll. 16-28. SEY. The Queen . . . signifying nothing.

1921: Wordsworth, Michael, Influence of Natural Objects, Nutting, Elegiac Stanzas, To the Rev. Dr. Wordsworth, To the Cuckoo, "Bright flower, whose home," and the following eight sonnets: "It is not to be thought of," "Dark and more dark the shades of evening fell", "O friend I know not", "Milton, thou shouldst", "Surprised by joy—impatient as the wind", "Hail twilight, sovereign of our peaceful hour", "I thought of Thee, my partner and my guide", "Such age, how beautiful"; Tennyson, The Epic and Morte d'Arthur, Œnone, The Brook, and the following sections of "In Memoriam"; XXVII, LXIV, LXXXIII, LXXXVI, CI, CXIV, CXV, CXVIII, CXXIII; Shakespeare, Merchant of Venice.

Passages for memorization: Wordsworth: "To the Cuckoo"; "It is not to be thought of"; "O friend, I know not"; "Milton, thou shouldst"; "Hail twilight, sovereign of our peaceful hour"; "I thought of Thee, my partner and my guide".

Tennyson: "Morte d'Arthur, ll. 246-255; Œnone, ll. 1-15, ll. 144-150. The lyric stanzas in the "Brook"; "In Memoriam": LXIV, LXXXIII, LXXXVI, CI, CXV, CXVIII.

Shakespeare—The Merchant of Venice:—

Act I, Sc. 1, ll. 79- 99. Let me play . . . their brothers fools.
Act II, Sc. 9. ll. 36- 49. Who chooseth me . . . to be new varnished.
Act IV, Sc. 1, ll. 184-205. The quality of mercy . . . the deeds of mercy.
Act V, Sc. 1, ll. 54- 65. How sweet the moonlight . . . cannot hear it.
Act V, Sc. 1, ll. 102-108. The crow doth sing . . . true proportion.

1. GREEK.

Translation into English of passages from the prescribed texts, with questions thereon.

Translation at sight of simple narrative passages similar to the Xenophon prescribed.

Questions on Greek accidence and on the common rules of Greek syntax, to test the candidate's accuracy and comprehension in such matters as are needful for the intelligent reading of his texts.

The following are the prescribed texts:—

1920: Xenophon, Philpotts and Jerram, Easy Selections from Xenophon, chaps. 3, 4, 5; Homer, Iliad, VI., 66-118 and 237 to the end.

1921: Xenophon, Philpotts and Jerram, Easy Selections from Xenophon, chaps. 3, 4, 5; Homer, Iliad, I., 1-350.

Two papers will be set: (i) Prescribed texts; (2) translation at sight, accidence and syntax.

Latin.

Translation at sight of passages of average difficulty from Cæsar, upon which special stress will be laid.

Translation, with questions, from a prescribed portion of Virgil's Æneid.

The marks assigned for the translation from prescribed authors shall not be more than twenty-five per cent. of the total marks assigned to the Latin papers.

Questions on Latin accidence.

Translation into Latin of English sentences involving a knowledge of the following principles of Latin syntax: The common uses of the cases; the accusative with the infinitive; the subjunctive in simple sentences; final and result clauses; the law of the sequence of tenses; the indirect question; verbs of fearing, doubting and hindering; the use of the participle, gerund and gerundive, active and passive periphrastic; indirect discourse; and the common forms of the conditional sentence.

The vocabulary will be taken from the prescribed portion of Cæsar and special stress will be laid upon this part of the examination.

Examination upon a short prescribed portion of Cæsar, to test the candidate's knowledge of Latin syntax and his power of idiomatic translation.

The following are the texts prescribed:—

1920, 1921: Cæsar, De Bello Gallico, Book IV., chaps. 20-38, and Book V., chaps. 1-23; Virgil, Æneid, Book II., vv. 1-505.

Two papers will be set: (1) Translation at sight, Virgil, and accidence. (2) Translation into Latin, syntax and idiomatic translation from prescribed Cæsar, etc.

French.

The candidate's knowledge of French will be tested by: (1) simple questions on grammar; (2) the translation of simple passages from English into French; (3) translation at sight of easy passages from modern French, and (4) an examination on the following texts:—

The texts contained in the New High School French Reader.

1920: Bazin, Six Contes (Oxford Junior French Series).

1921: Labiche, La Grammaire; Souvestre, Le Serf.

Two papers will be set: (1) Prescribed texts and translation at sight; questions on grammar; (2) the translation of English into French.

German.

The candidate's knowledge of German will be tested by: (1) simple questions on grammar; (2) the translation of simple passages from English into German; (3) translation at sight of easy passages from modern German; and (4) an examination on the following texts:—

The texts contained in the New High School German Reader with the exception of Von Fallensleben, Deutschland über Alles.

1920: Hauff, Das kalte Herz.

1921: Benedix, Eigensinn; Seidel, Der Unsichtbare.

Two papers will be set: (1) Prescribed texts and translation at sight; questions on grammar; (2) the translation of English into German.

Candidates at the Junior Leaving or Junior Matriculation examination who obtain the necessary percentage in the subjects required for Matriculation in Music may, on petition to the Senate, be granted Matriculation in Music.

Special applications for Matriculation may be dealt with by the Senate.

BACHELOR OF MUSIC.

Registration.

Every student shall, in each year of his course, register his name with the Secretary of the Faculty of Music not later than the first of November.

Undergraduate Course.

In addition to Matriculation the candidate must have passed three examinations before the degree of Bachelor of Music shall be granted.

First Year.

1. Harmony in three and four parts.
2. Counterpoint in two and three parts.
3. The History of Music from 1600 to 1800.

Second Year.

1. Harmony in not more than four parts.
2. Strict Counterpoint (including the treatment of the various species in combination) in not more than four parts.
3. Double Counterpoint at the octave, in two parts.
4. Canon in two parts.
5. Fugue as far as subject and answer.
6. The History of Music from 1800 onwards.

Final Year.

THEORY OF MUSIC:—

1. Harmony in not more than five parts, including some original work.
2. Counterpoint, strict and free, in not more than five parts.
3. Canon in two and three parts.
4. Double Counterpoint at the octave, 10th, 12th, and 15th.
5. Imitation and Fugue up to four parts.
6. A general survey of the History of Music from the earliest times to the present. (Text-book recommended, Bonavia Hunt's History of Music, but see also list of text-books on page 83).
7. Elements of Acoustics.
8. Musical form.
9. Orchestration.
10. Viva voce:—Analysis of the full orchestral score of some classical work or works.

1920: Schumann's Symphony, No. 2 or Beethoven's Symphony, No. 8.

PRACTICAL MUSIC:

Candidates shall be required to play—on the piano or some orchestral instrument—or sing:—

Two or three compositions (or portions of them), selected by the examiner. They shall also be required to play, at the keyboard, the following tests, etc.:—

1. Transposition.
2. Extemporization upon a given theme.
3. Modulation.

Equivalent tests will be imposed for singers or players upon orchestral instruments.

In addition to the prescribed course for the Final Examination, an original composition, either sacred or secular, will be required, containing at least four movements and sufficiently long to occupy from fifteen to twenty minutes in performance, and must be:

(*a*) A chorus in five parts, with a short instrumental introduction.

(*b*) A recitative and solo.

(*c*) A quartette or quintette for voices only.

(*d*) A four part vocal fugue.

Numbers (*a*), (*b*) and (*d*) must have accompaniments for string band only.

This composition must be sent to the Secretary of the Faculty not later than April 1st accompanied by a declaration that it is the candidate's own unaided work.

Candidates for the degree may defer presenting this composition until a subsequent annual examination, in which case the fee for examination shall be $10.

For 1919-20 certificates of having passed the examination of the First and Second years of the institutions that were formerly affiliated with the University, namely, the Toronto College of Music and Toronto Conservatory of Music, will be accepted *pro tanto* in lieu of the First Year Examination.

For 1919-20 the examination for the diploma of the Toronto College of Music and Toronto Conservatory of Music will be accepted *pro tanto* in lieu of the First and Second Year examination, provided always that these examinations include the work required.

The Senate may admit *ad eundem statum* undergraduates of other Universities after due inquiry as to the requirements demanded by the institutions in which the candidates obtained their standing.

Examinations.

The examinations will take place at times to be fixed by the Senate.

Applications must be transmitted to the Secretary of the Faculty before the first of April, and at the time of application the proper fee must be paid to the Bursar.

The total number of marks necessary to pass on any subject is 60: second class honours, 70; first class honours, 80: maximum 100.

Fees.

Matriculation	$10.00
Registration and Lecture Fees (Annual)....$5.00 each	10.00
Each examination subsequent to matriculation	10.00
For admission *ad eundem statum*	10.00
Degree of Mus. Bac.	20.00
Lecture Fee for Occasional Students, $2.00 for each subject, covering all subjects, fee	5.00

Text-Books.

Stainer's Treatise of Harmony; Prout's Harmony; Hiles' Grammar of Music, Books I. and II.; Bannister's Music; Bridge's Primer of Counterpoint; Prout's Counterpoint; Richter's Counterpoint (Franklin Taylor's edition); Cherubini's Counterpoint, Canon and Fugue; Prout's Double Counterpoint and Canon; Jadassohn's Canon and Fugue; Higgs' Primer of Fugue; Prout's Fugue; Stainer's Primer of Composition; Prout's Musical Form; Ouseley's Musical Form; Prout's Fugal Analysis; Prout's Primer of Instrumentation; Niemann's Catechism of Musical Instruments; Berlioz on Instrumentation; Stone's Primer on Scientific Basis of Music; Sedley Taylor's Sound and Music; Sedley Taylor's Science of Music; Tyndall on Sound; Bonavia Hunt's History of Music; Naumann's History of Music; Parry's Summary of Musical History (Primer); Rockstro's History of Music; Articles in Grove's Dictionary of Music and Musicians bearing on the various subjects for examination.

Candidates are not restricted to the above list, which is only suggested. The paper work is judged irrespective of any particular author or school.

DEGREE OF DOCTOR OF MUSIC.

Candidates for the degree of Doctor of Music must be Bachelors of Music of this or another university of at least three years' standing. Every candidate shall register his name with the Secretary of the Faculty not later than the first of November.

Candidates must present a musical exercise by the first day of April for submission to the examiners in Music, the approval of which is a necessary preliminary to further examination.

The exercise must be of the nature of a Cantata, sacred or secular, scored for full orchestra, and requiring from 40 to 60 minutes for its performance. The cantata must include an overture and parts for one or more solo voices, in addition to choruses.

If the exercise be approved the candidate must undergo an examination of a more advanced character than is involved in the Mus. Bac. examination in Harmony, Counterpoint, Fugue, Musical Form, Orchestration, and Musical History.

The fee for the examination is fifty dollars, divided as follows: Reading exercise, twenty-five dollars; practical and theoretical examinations, twenty-five dollars.

The fee for the degree is thirty dollars.

The examinations will take place at times to be fixed by the Senate.

Applications must be transmitted to the Secretary of the Faculty before the first of April, and at the time of application the proper fee must be paid to the Bursar.

University of Toronto.

FACULTY OF MUSIC.

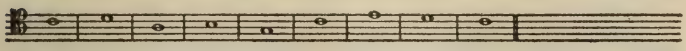
ANNUAL EXAMINATIONS, 1919.

THIRD YEAR.

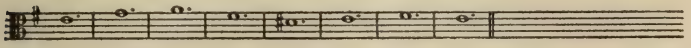
COUNTERPOINT.

Examiner—HEALEY WILLAN, F.R.C.O.

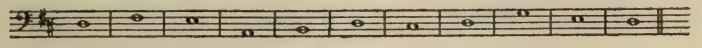
1. To the following C.F. add a bass in the 4th and a treble in the 3rd species.



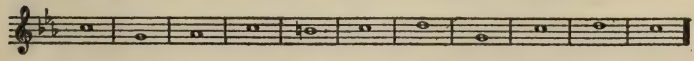
2. To the following C.F. add a treble in the 3rd species in 3/2 time. Transpose the C.F. into the major and add a bass in the 3rd species in 6/4 time.



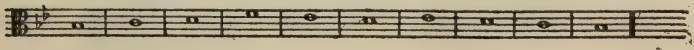
3. To the following C.F. add three upper parts, one in the 1st species, one in the 2nd species, and one in the 5th species.



4. To the following C.F. add 4 parts all in the 5th species. The C.F. is to be regarded as written for the 2nd treble.



5. To the following C.F. add a treble and a bass in free counterpoint, introducting points of imitation.



University of Toronto.

FACULTY OF MUSIC.

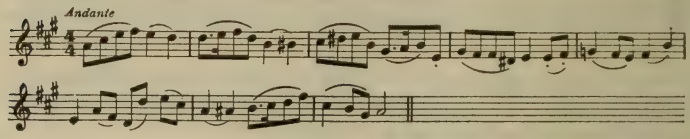
ANNUAL EXAMINATIONS, 1919

SECOND YEAR.

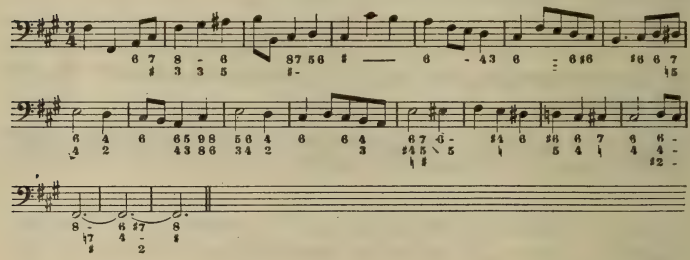
HARMONY.

Examiner—ALBERT HAM, Mus.Doc., F.R.C.O.

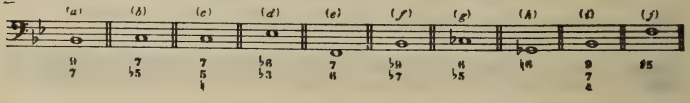
1. Add three parts to the following melody. Figure the bass.



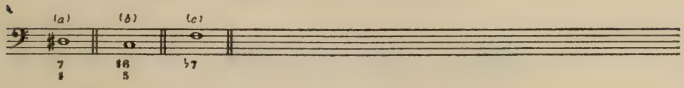
2. Harmonize this figured bass.



3. Carefully describe every chord in the following. Precede and follow each chord by one or two other appropriate chords. The whole exercise should be in the key of B flat major.



4. Resolve these chords. Enharmonically change them and resolve them in various keys.



5. Write examples of Double and Triple Suspensions, Inverted Cadences, Tonal and Real Sequences and False Relation.

University of Toronto.

FACULTY OF MUSIC.

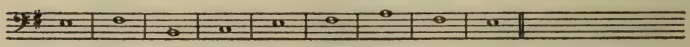
ANNUAL EXAMINATIONS, 1919.

SECOND YEAR.

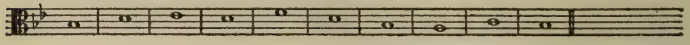
COUNTERPOINT.

Examiner—HEALEY WILLAN, F.R.C.O.

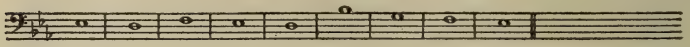
1. To the following C.F. add an alto in the 2nd species.



2. To the following C.F. add a bass in the 1st and a treble in the 3rd species.



3. To the following C.F. add an alto in the 4th and a treble in the 5th species.



4. Transpose the C.F. in question 1 into E major and add three parts above, all in the first species.

5. Write an account of the treatment of the minor scale, with particular reference to the sixth and seventh degrees. Give illustrations.

University of Toronto.

FACULTY OF MUSIC.

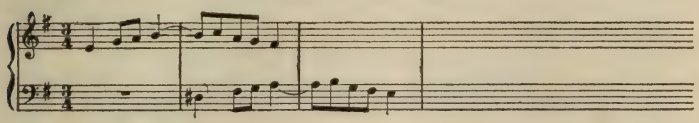
ANNUAL EXAMINATIONS, 1919.

SECOND YEAR.

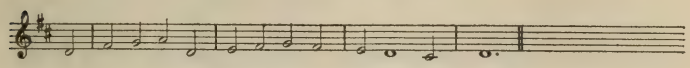
DOUBLE COUNTERPOINT, CANON AND FUGUE.

Examiner—HEALEY WILLAN, F.R.C.O.

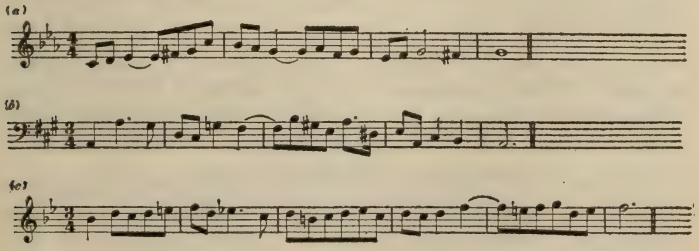
1. Continue the following finite canon at the 9th below, adding not less than 12 bars and a coda.



2. To the following theme add a double counterpoint at the octave. Show the inversion.



3. Give correct answers to the following fugue subjects.



4. Comment upon "real" and "tonal" answer; give examples.

5. Write a counter subject in double counterpoint at the octave to one of the subjects in question 3.

University of Toronto.

FACULTY OF MUSIC.

ANNUAL EXAMINATIONS, 1919.

SECOND YEAR.

HISTORY OF MUSIC.

Examiner—F. A. MOURÉ.

1. Give an account of the change in musical thought and expression which took place about the year 1600, and mention some of the causes which led up to it.

2. Comment upon the relative value of Schubert's and Schumann's influence upon the Romantic school, and state the reasons for your conclusions.

3. Describe the chief characteristics of Rossini's music and indicate in what respects his treatment of opera differs from the modern Italian use of that form. Mention also some of his principal works.

4. State what you know about Liszt and his influence upon (*a*) pianoforte music and (*b*) the symphonic poem for orchestra.

5. Name the composers of any *five* of the following works: "The Seasons," "L'Africaine," "La Dame Blanche," "Samson," "Norma," "Paradise and the Peri," "Iris," "Il Matrimonio Segreto," "La Clemenza de Tito," "Hiawatha's Wedding Feast."

6. What is the chief point of difference between the music of Debussy and that of the composers of the classical period?

University of Toronto.

FACULTY OF MUSIC.

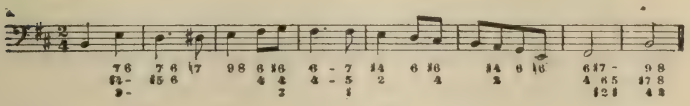
ANNUAL EXAMINATIONS, 1919.

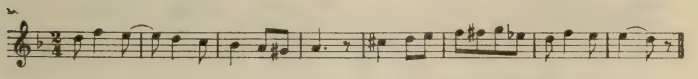
FIRST YEAR.

HARMONY.

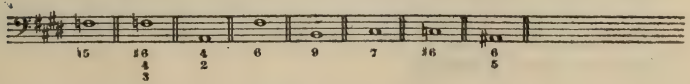
Examiner—ALBERT HAM, Mus.Doc., F.R.C.O.

1. Add treble, alto and bass parts to the following figured bass.



2. Add three parts to this melody.

3. Modulate from: (*a*) E flat major to C major; (*b*) from E major to F sharp minor; (*c*) from B flat major to D major; (*d*) from F major to C sharp minor.

4. Place a suitable chord before and after each of the following chords, treating them all as belonging to the key of E major. Explain each chord.



University of Toronto.

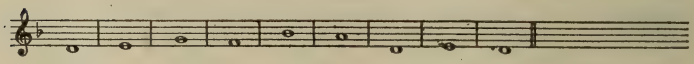
FACULTY OF MUSIC.

ANNUAL EXAMINATIONS, 1919.

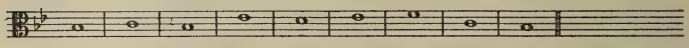
FIRST YEAR.

COUNTERPOINT.

Examiner—HEALEY WILLAN, F.R.C.O.

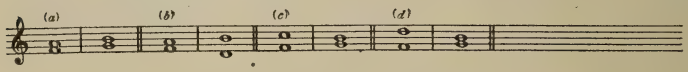
1. To the following C.F. add a bass in the 2nd species.

2. To the following C.F. add an alto in the 3rd species.

3. To the following C.F. add a bass in the 1st and a treble in the 4th species.



4. Transpose the C.F. in question 3 into A major, place it in the treble and add a tenor in the 1st species, and a bass in the 5th species.

5. Explain clearly the meaning of the "Tritone". Criticize the following.



University of Toronto.

FACULTY OF MUSIC.

ANNUAL EXAMINATIONS, 1919.

FIRST YEAR.

HISTORY OF MUSIC.

Examiner—F. A. MOURÉ.

1. To which earlier composers was Beethoven mainly indebted for the style of his piano compositions? Describe as well as you can the essential difference between Beethoven's and Chopin's piano works.

2. Give approximate dates of birth and death of Lully, and state in what forms his principal contributions to the musical art were cast. Name also his chief contemporary in England.

3. Name the English composer who had the advantage of taking some lessons from Mozart.

4. What name was given to the notation employed for the lute? And to what development is the decay of this instrument usually attributed?

5. Which German master of the 19th century may be considered the greatest descendant of Beethoven in the classical symphonic form? And why?

6. State the reason why compositions for keyed instruments until the time of Bach were always written in keys with few flats or sharps.

7. Name a celebrated organist of each of the countries: England, France, Germany, Italy (any period).

8. Place in approximate chronological order the following, with brief remarks upon each: Clementi, Tschaikowski, Meyerbeer, Rubinstein, Gluck, Debussy, Spohr.

University of Toronto.

FACULTY OF MUSIC.

LOCAL EXAMINATIONS, JUNE, 1919.

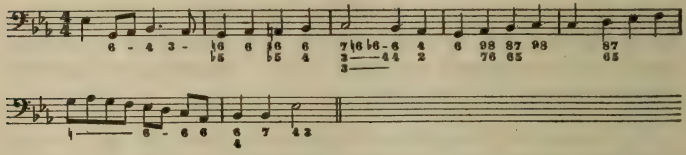
SENIOR DIVISION.

THEORY OF MUSIC.

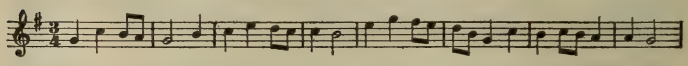
Examiner—HEALEY WILLAN, F.R.C.O.

(*Three Hours.*)

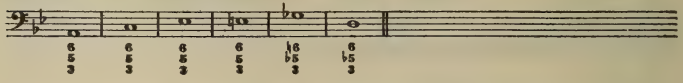
1. Add three parts above the following figured bass:



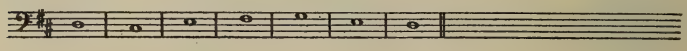
2. Harmonise the following melody:



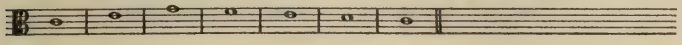
3. Describe and resolve the following chords in the key of B flat.



4. Add an alto part in the first species to the following C.F.



5. To the following C.F. add (*a*) a treble part in the 2nd species, and (*b*) a bass part in the 5th species.



6. Describe Ternary proper form. What movement in a sonata is generally written in this form?

7. Write a regular binary sentence (melody only), mark the divisions, and harmonise the cadences.

8. Mention the names of six composers who lived between 1600 and 1850, and give their dates; mention one work by each of them and classify it.

University of Toronto.

FACULTY OF MUSIC.

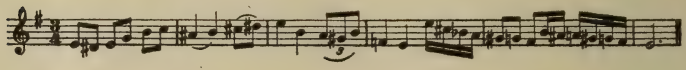
LOCAL EXAMINATIONS, JUNE, 1919.

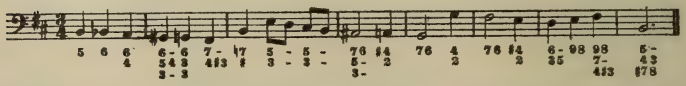
INTERMEDIATE DIVISION.

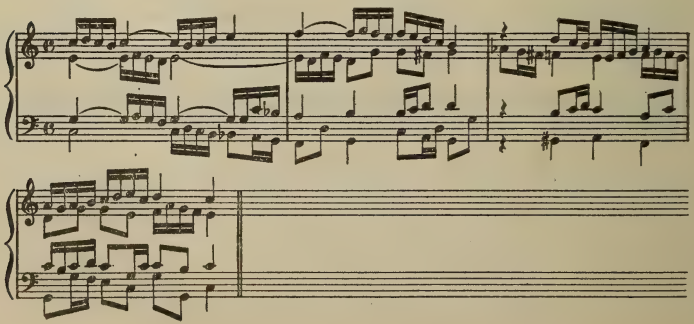
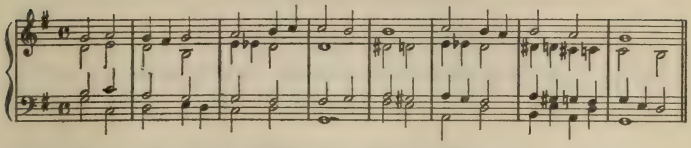
THEORY OF MUSIC.

Examiner—H. A. FRICKER, Mus. Bac.

(*Three hours.*)

1. Transpose the following by changing the clef, *i.e.*, (i) C clef, (ii) Bass clef; In each case write correct signature and make the necessary alterations in the accidentals, naming each key.

2. Add treble, alto and tenor parts to the following in short score.



3. Write out the following in open score using the C clef for the alto and tenor parts.

4. Figure the following:

5. Explain the following: Slur, Tie, Bis, Arpeggio, 8 Ve, Appogiatura, Acciaccatura, turn, trill, mordent, and give examples of each.

6. Modulate as follows from C to G, to E minor, to A minor, to D major, then back to C. Use suspensions and passing notes.

7. Give the names of composers of the following works: Messiah, Choral Symphony, Scotch Symphony, Moonlight Sonata, Surprise Symphony, Magic Flute Opera, Unfinished Symphony in B minor, Papillous, Marseillaise, Orfeo, Mastersingers, Songs of the Fleet, The Mikado, Rule Britannia, Mass in B Minor. Give dates of birth and death of each composer.

University of Toronto.

FACULTY OF MUSIC.

LOCAL EXAMINATIONS, JUNE, 1919.

JUNIOR DIVISION.

THEORY OF MUSIC.

Examiner—ALBERT HAM, Mus. Doc., F.R.C.O.

(*Three hours.*)

1. Express the following in 2-8 time.

2. Write one bar each of 6-8, 3-4 and 2-2 time, using Eighth notes only. Group them correctly, and mark the accents with a circumflex, ^

3. Write the scale of G sharp minor (melodic) and its relative and tonic majors, ascending and descending—one octave only.

4. Explain the construction of the Harmonic Minor Scale.

5. Define Scale, Diatonic Scale, Harmonic Chromatic Scale, Clef, Rest, Tie or Bind, Leger Line, Measure and Bar.

6. Explain the Chord of the Dominant Seventh and state why it is a discord.

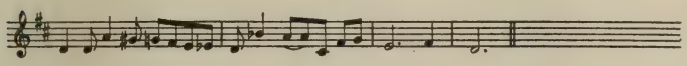
Write a Dominant seventh and its inversions *in* A and *on* A.

7. Write the second inversions of the Common Chords of B major and G minor.

8. Write a minor 2nd, major 3rd, Perfect 5th and Augmented Sixth above and below E flat.

What does a minor 3rd become when inverted?

9. Transpose the following (*a*) into the Bass clef a fourth lower, (*b*) into the key of E flat, (*c*) a semitone lower.



Insert the Time-signature.

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THE

CALENDAR

OF THE

University of Toronto

DEPARTMENT OF

SOCIAL SERVICE

SESSION 1919-1920.

UNIVERSITY OF TORONTO PRESS

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UNIVERSITY OF TORONTO PRESS

CALENDAR 1919-1920.

1919—Sept.	15	Monday	Applications for admission to be sent in by this date.
Oct.	1	Wednesday	Enrolment.
Oct.	1	Wednesday	Academic Year begins at 9.00 a.m.
Oct.	1	Wednesday	The opening address by the President to the students of all Faculties at 3 p.m., in Convocation Hall.
Oct.	2	Thursday	Lectures begin at 9.00 a.m.
Dec.	19	Friday	Last day of lectures. Term ends at 12 noon.
Dec.	25	Thursday	University Buildings closed.
1920—Jan.	1	Thursday	University Buildings closed.
Jan.	6	Thursday	Easter term begins.
Apr.	2	Friday	University Buildings closed.
May	24	Monday	University Buildings closed.
June	4	Friday	University Commencement.

ADMINISTRATIVE OFFICERS.

The University.

President.....Robert Alexander Falconer, K.C.M.G., M.A., LL.D., D.Litt.

Registrar.....James Brebner, B.A.

Bursar.....Ferdinand Albert Mouré, Esq.

Department of Social Service.

Director (Acting).....Robert Morrison MacIver, M.A., Edin., B.A., Oxon., D.Phil., Edin.

Director of Field Work.....Agnes Christine McGregor.

Staff of the Department.

Charles Kirk Clarke, M.D., LL.D.,
Professor of Psychiatry, University of Toronto.
Head of Psychiatric Clinic, Toronto General Hospital.
Medical Director, Canadian National Committee for Mental Hygiene.

Thomas Rutherford Robinson, Ph.D.,
Assistant Professor of Philosophy, University of Toronto.

Sedley Anthony Cudmore, B.A., B.A., Oxon.,
Assistant Professor of Political Science, University of Toronto.

William George Smith, B.A.,
Assistant Professor of Psychology, University of Toronto.

Edward A. Bott,
Department of Psychology, University of Toronto.

Clarence M. Hincks, M.D.,
Secretary and Associate Medical Director Canadian National Committee for Mental Hygiene.

Edwin John Pratt, M.A., Ph.D.,
Lecturer Psychology, University of Toronto.

John Gerald Fitzgerald, M.B.,
Director, Antitoxin Laboratory and Associate Professor of Hygiene.

ROBERT DAVIES DEFRIES, M.D., D.PH.,

Associate Director, Antitoxin Laboratory and Demonstrator, Department of Hygiene.

HORACE LESLIE BRITTAIN, M.A., PH.D.,

Managing Director, Bureau Municipal Research, Superintendent ((1918-19), Toronto General Hospital.

LUCY W. BROOKING,

Superintendent of the Ontario Industrial School for Girls.

NORMAN LEONARD BURNETTE,

Ontario Vocational Branch, Department of Soldiers' Civil Re-establishment.

VERA PARSONS, M.A.,

Italian and Slavic Worker, Central Neighbourhood House.

WALTER ALEXANDER RIDDELL, M.A., B.D., PH.D.,

Superintendent, Trades and Labour Branch, Ontario Government.

KATHLEEN RUSSELL, B.A.,

Supervisor of Hospital Extension Service, of the Division of Public Health Nursing, Department of Public Health.

FRANK NEIL STAPLEFORD, M.A., B.D.,

General Secretary, Neighbourhood Workers' Association.

MARGARET KIRKPATRICK STRONG, M.A.,

Special Investigator, Trades and Labour Branch, Ontario Government.

MARY YATES,

Lecturer, Ontario Department of Agriculture, Vice-President, Ontario Horticultural Association.

THE DEPARTMENT OF SOCIAL SERVICE.

In 1914 the University of Toronto established the Department of Social Service, thus inaugurating for Canada a scientific school for the training of social workers. A number of causes combined to stimulate this extension of the sphere of the University. The sense of social obligation and interdependence has grown greater as our social life has grown more complex. The more social conditions have been studied the more apparent has it become that many of our worst evils are due to the lack of the science which should direct and stimulate the sense of our solidarity. In recent years governments, municipal and other authorities, industrial corporations and voluntary associations of all kinds have been compelled to make ever-extending provision for industrial protection, social insurance, public health service, housing improvement, recreation and various other forms of organized social effort. All these activities have created the sphere of a new profession, that of trained social worker. This most recent of professions promises to be one of the most important. It demands as thorough training as any other profession—a fact which has been too little recognized in the past. Unlike most professions it suffers from the lack of qualified persons to fill the responsible positions within it, and one of the main purposes of the Department of Social Service is to supply this need by providing adequate courses of training for those already engaged in, and for those who intend entering upon, social work. Besides this, it seeks to appeal to any who are desirous of acquiring that intimate knowledge of social conditions and problems, principles and developments which will enable them to understand more fully, and to take more intelligent and effective part in, the social life and work of to-day.

The need for social training has been further emphasized by the social conditions both revealed by and resulting from the war. New social problems have been thrust upon us and old ones aggravated. There are to-day unlimited opportunities for scientifically directed social service. The better to fit students for these opportunities, the Department has this year for the first time assigned special series of courses which correspond to the various directions the social worker may follow, thus giving every student the opportunity to specialize in the study and treatment of some one branch of service. The Department will seek in this way to keep its students in touch with all important developments in the handling of these great problems.

SOCIAL SERVICE BUILDING.

The Department of Social Service is located in the Social Service building in the University grounds on College Street at the corner of the east entrance to the University grounds. The Director's office, lecture and class rooms, the library, reading room and other branches of its work will be found there, the building providing every facility for carrying on the activities of the Department.

LIBRARY.

The Department of Social Service is developing a large and valuable library of books on social subjects. It contains also the reports and bulletins of the principal agencies in the different forms of both Canadian and American work, including both governmental and private institutions. The McCormick Fund, recently gifted to the Library through private generosity, is a very important addition to its resources.

CONSULTATION SERVICE.

The Department of Social Service will place its facilities at the disposal of those who wish information on social work or social problems. The service of the members of its staff and the Director will be available for any responsible request directed to its office, for information as to social methods and possibilities, for assistance in solving the social problems of the different communities of the Dominion, or for aid in the development of social work throughout Canada.

CLASSIFICATION OF STUDENTS.

The courses of the curriculum are arranged to provide for the needs of:

1. Those who desire a knowledge of social conditions and social problems so as to qualify themselves for intelligent active citizenship.
2. Persons intending to enter the profession of social service.
3. Volunteer workers. The volunteer in social work, whether giving a few hours weekly, or full time without salary, is of much value to social agencies. Volunteer workers also mould public opinion and often become leaders in procuring proper legislation and effective administration affecting public and private work.
4. Special classes of workers such as clergymen and church workers, teachers, Y.M. and Y.W.C.A. workers, those engaged in many forms of medical or nursing work or in different branches of public work.

Each year this fourth group has numbered over two hundred part-time students, and last term it included the graduating classes of nine hospitals, nurses of the Public Health Department and of the Victorian Order, two groups of student deaconesses and one group of theological students.

REQUIREMENTS FOR ADMISSION.

Both men and women are received as students. Registration is either as regular full-time students or as part-time students. Part-time students take a selected course or courses. Full-time students take the full one year's programme leading to the certificate or the two years' course leading to the diploma. It is possible to take the regular one year course extended over more than one year.

The completion of a college course, though not essential, is the most desirable preparation for admission as full time student, and graduates of a college or university will be admitted without further requirement. Candidates of sufficient general training will be received as full-time students provided they have the requisite qualifications successfully to handle and benefit by the work, which will be determined separately in each case. Persons with previous practical experience or already engaged in social work will have special consideration, although such experience in social work is not required.

The work of the second year is open to those who have completed the requirements of the regular one-year course or who have taken its equivalent in an accepted institution elsewhere.

Applications for admission should be sent in to the Secretary not later than September 16th.

COURSES OF INSTRUCTION

The training which the Department of Social Service provides falls into three parts:

A. *Courses intended to instruct the student in the fundamental conditions and principles of social life and development.*

It is essential that the student who is qualifying for practical social work should study the underlying social and economic conditions; should appreciate their historical evolution; and should understand the ideas and motives which determined associations and institutions, and the various forms of co-operation and conflict within society. The Department therefore insists that all its full time students take the courses offered in these subjects.

To benefit properly by these courses a preliminary training in history, economics, and philosophy is of great value, and students who are looking forward to entering the Department of Social Service are urged to make such preparation in these directions as they possibly can.

The courses under A link the Department of Social Service more particularly to the Departments of Philosophy and of Political Economy. Courses actually given in these Departments are marked (Department of Philosophy) and (Department of Political Economy) respectively.

B. *Courses giving instruction in respect of the specific conditions and problems of social service.*

These courses are intended to reveal to the student the definite problems of modern society, such as he or she must face in the profession of social service. They comprehend the study, (1) of the different social environments, in town and country, wherein such service can be rendered; (2) of the particular forms and conditions of social health and disease, progress and decline; and (3) of the organization and methods adopted by the various institutions and agencies working for social welfare.

C. *Field work*,—giving actual practice and training in the performance of social work.

The place of field work cannot better be set forth than in the words of Graham Taylor:

"Training for social work cannot be given merely by lectures or by the study of books or even by observation. One can learn how to do only by doing under expert supervision. . . . They may have learned why social work is being done; they have not learned how to do it.

"It is becoming constantly more evident that social work should no more be undertaken without preliminary training in the field than medical practice without clinical experience."

Instruction in the methods of field work will be given at the commencement of the session by the Director of Field Work.

First Year Courses.

A minimum of ten hours of lecture and class-room instruction a week is required of full time students. The courses under A are required of all full-time students. Students who have already taken an equivalent of any of the courses under A may be exempted under certain conditions from such courses. All full-time students are required to take not less than five courses under B, subject to regulations below.

Courses marked with an asterisk are not open to part-time students except by special permission. All regular courses, unless otherwise stated, involve one lecture hour each week throughout the year.

Full-time students specializing in Medical Social Service must have as a prerequisite either medical or nursing training to count the course for credit. Students specializing in Mental Hygiene must have either the above-mentioned training or other special qualification for the above. The work in Medical Social Service or Mental Hygiene is accompanied by specialized field work, in connection with the medical and social agencies of the city. The field work provides thorough training in the technique and methods of these branches of service. Part-time students may take the Medical Social Service Course or the Mental Hygiene Course after consultation and arrangement. Part-time students take these courses, however, without field work.

Full-time students are expected to signify on entering the course, their preference for one or other of the various divisions of Social Work classified under the following heads:

A. Community Organization.
B. Child Welfare.
C. Settlement Work.
D. Industrial Investigation.
E. Mental Hygiene.
F. Medical Social Work.

The following additional courses are required of students under these various classifications:

A.—Social treatment of poverty (5), Community Work (6), The Municipality (8), Rural Conditions (17).

B.—Social treatment of Poverty (5), Child Welfare (11 and 12), Social and Industrial Hygiene (7).

C.—Social treatment of Poverty (5), Community Work (6), The Municipality (8), Social and Industrial Hygiene (7).

D.—Social treatment of Poverty (5), Community Work (6), Social and Industrial Hygiene (7), Industrial Problems (13).

E.—Social treatment of Poverty (5), Social and Industrial Hygiene (7), Medical Social Work (9), Psychiatry (15), Occupational Therapy (16).

F.—Social treatment of Poverty (5), Medical Social Work (9), The Municipality or Child Welfare (8 or 11), Industrial Problems or Occupational Therapy (13 or 16).

A.

*1. EVOLUTION OF MODERN INDUSTRY.

A course dealing with the Industrial Revolution, tracing the development of modern capitalism, the factory system, associations of capital and of labour, industrial legislation, and explaining in general the social and political reactions of modern industrial changes.

(Department of Political Economy, 6).

PROFESSOR MACIVER.

*2. SOCIAL ECONOMICS.

A course on the elementary principles of economics; value, utility, wealth individual and national, the relation of wealth to welfare, competitive and anti-competitive forces; followed by certain applications to the problems of the wage-system and its alternatives, trade-unionism, unemployment, women in industry, juvenile labour, conditions of industrial work, and the distribution of wealth and poverty.

PROFESSOR MACIVER.

*3 (a) GENERAL INTRODUCTION TO PSYCHOLOGY.

Perception, imagination and memory in the child and the adult. The relation of instinct and emotion to behavior. Reasoning, volition and motive in everyday life. Mental attitudes and psychological reactions of social significance.

(b) MENTAL TESTING.

Relation of experimental psychology to the measurement of intelligence. History of mental tests. Problems of standardization. Norms and variations. The Binet-Simon scale with revisions. Application of methods to juvenile and adult intelligence. Correlation of mental abnormality with moral delinquency. Discussion of social problems involved.

THE STAFF OF THE DEPARTMENT OF PSYCHOLOGY.

4. SOCIAL ETHICS.

The course will deal with the basal conceptions in Ethics, and their application to the problems of personal conduct and social relations. The basis of morals in human nature; the influences of heredity and environment; standards, motives, and sanctions of conduct; moral education; the sphere of morals in community life.

(Department of Philosophy).

PROFESSOR ROBINSON.

B.

5. THE SOCIAL TREATMENT OF POVERTY.

A course dealing with the problem of modern relief and the principles of social treatment of dependents. The main causes of poverty and their inter-relations (ill-health; low wages; unemployment; physical, mental or moral defects; industrial accidents; old age, widowhood; desertion; large family). Public and private relief agencies and their relation. Social diagnosis. Investigation. Sources and comparison of social evidence. The Confidential Exchange.

MR. STAPLEFORD.

6. COMMUNITY WORK.

A course covering general community-wide activity. The settlement movement. Its history and development. Varied types of settlements, distinctive functions. Methods of approach, organization and administration. General community organization and development, possibilities and methods.

7. SOCIAL AND INDUSTRIAL HYGIENE.

The important elementary facts of hygiene and disease which social workers require to know. The machinery of public health, federal, provincial and municipal. Preparation and adulteration of foods, including drugs. Sanitation of buildings. Water and milk supply and the disposal of refuse. Food and diet. Preventive medicine. Tuberculosis and other contagious diseases. Diseases of occupation. Health conditions in industrial plants. Method of guarding against industrial poisons. Industrial fatigue and its consequences.

THE STAFF OF THE DEPARTMENT OF HYGIENE.

8. THE MUNICIPALITY; ITS WORK AND PROBLEMS.

The nature of a municipality. Types of municipal organization. Municipal organization in Toronto, Hamilton and Ottawa. Functions of a city organization. Transportation. Sanitation. Health. Protection of life and property. Corrections. Housing. Recreation. Relation of city government to education. Citizen organization. Social and governmental surveys.

DR. BRITTAIN.

9. MEDICAL SOCIAL WORK.

Preparation for medical social work in hospitals, clinics, and all health agencies. Social organization of the hospital. Social training for workers in public health departments, municipal, provincial and federal. Social training for industrial nurses. Technique and methods of medical social work.

Full-time students taking this course are required to do specialized field work.

MISS RUSSELL.

10. RECREATION AND PLAYGROUND WORK.

The playground and recreation centre movement. Organization and development. Control and administration. Significance of play. Types and periods. The playground supervisor. Activities for adults. Community recreation. The playground and delinquency, education, citizenship, etc.

Part of the course will be devoted to the organization and conduct of games and play, including demonstration work accompanied by actual practice. Folk games, folk dancing, musical games and drill, etc.

11. CHILD WELFARE—LECTURE COURSE.

The child and the family. Child education, child recreation, child labour. Vocational direction. Dependent and defective children. Child placing and children's societies. Institutional care. Juvenile delinquency and the development of the juvenile court. Probation and parole methods.

MISS BROOKING.

12. CHILD WELFARE—DISCUSSION COURSE.

A course on the technique of the conduct of juvenile welfare work. It must either accompany or supplement the course on Child Welfare. It covers the handling of technical details of problems of Juvenile Court work, child placing, etc. Free discussion of problems by the instructor and class.

MISS BROOKING.

13. INDUSTRIAL PROBLEMS.

This course is designed as an introduction to the study of social questions as they centre in industry, and will include some discussion of industrial conditions, industrial relations and labour legislation. Working conditions including wages, hours, personal relations in the shop, and other matters relating to the health, safety, stability, and welfare of the workers will be subjects of study.

MISS STRONG.

14. THE ESSENTIALS OF CASE WORK—DISCUSSION COURSE.

A course dealing with the problems of relief and family rehabilitation. Standards and technique of case work. The social worker's viewpoint and the scientific spirit. The case worker's knowledge of social legislation. The social organization of a Canadian city. Study of selected case records and problems arising in field work. Free discussion by instructor and class.

15. PSYCHIATRY.

Definitions of fallacious sense preceptions, such as hallucinations, illusions, delusions, etc. Symptoms—Cause and treatment of mental diseases. Mental deficiency, epilepsy, heredity. Clinical demonstrations and examinations. History and case taking. Relations of Social work to psychiatry.

DR. CLARKE.

16. OCCUPATIONAL THERAPY—PRINCIPLES AND PRACTICE.

The history of Occupational Therapy. The present field and future development. The functions of Occupational Therapy. Types of occupations and their therapeutic value. Lessons from the war. The crippled child. The industrial cripple. Occupations in institutions and in the patient's home. Learning to earn. Salvaging the cripple for industry.

MR. BURNETTE.

17. RURAL CONDITIONS AND PROBLEMS.

The complexity and importance of rural sociology. Inadequate social facilities. Leadership, resident and non-resident. Rural recreation. Economic and social surveys. Rural clubs and related organizations. Social and vocational functions of the rural school. Consolidation and efficiency. The farm home. Religious and moral conditions. The rural press and literature. Rural credits and co-operation. The challenge of a new rural awakening.

MISS YATES.

SPECIAL COURSE OF PUBLIC LECTURES.

A series of monthly lectures by experts on social conditions and various branches of social work and welfare. Leaders in various social movements in Canada and the States will explain the work with which they are connected.

These lectures are given in the afternoon and are open to the public. The syllabus of the course is issued in October and may be had on application to the Department.

Field Work.

Practice or field work forms an integral part of the course for the regular full-time students, in addition to the lecture and class-room instruction. It is made possible only by reason of the large number of important and excellent institutions in the city of Toronto, provincial, municipal, and private, carrying on the different branches of social work.

The field work corresponds in methods of instruction to the clinical training in medical instruction. The students actually participate in the different forms of social work, thus learning the definite technique of the work, special emphasis being laid upon family work or "case" work, administrative and office experience and neighbourhood and community work, these being fundamental and preliminary to specialized forms of work in which the student is given some opportunity of choice, particularly in the latter part of the year.

Regular students are required to give at least ten hours a week to field work throughout the academic year. The practice work is under the careful supervision of practical workers, and the thorough oversight of the Department. Weekly reports of the work are made to a Supervisor and to the Director of Field Work.

Arrangements have been made for the carrying on of field work in connection with the following agencies:

Toronto General Hospital, Trades and Labour Branch of the Government, Juvenile Court, Social Service Commission, Bureau of Municipal Research, Neighbourhood Workers' Association, Department of Soldiers' Civil Re-establishment, Department of Public Health, National Committee for Mental Hygiene, various Settlements, etc.

Second Year Courses.

The courses of the second year are arranged on the same general principles as those of the first year, viz.:

A. Fundamental Courses in Social Science.

B. Special Courses dealing more intensively than in the first year with selected forms of social work and investigation.

C. Field Work, in close conjunction with the subjects covered in the Special Courses. Students of the second year are expected to engage in some one definite and continuous piece of field investigation.

Courses marked with an asterisk are required of all full-time students. One course must also be selected under B. Additional courses may be selected by the student, provided he or she is capable of undertaking the work.

Admission to the instruction of the second year is limited to those who have taken the work of the first year, or its equivalent elsewhere. Students may be admitted to individual courses who have taken sufficient work in that subject to be able to satisfy the requirements of such course, or who establish their qualifications for admission to the course.

No student will be admitted to the field work of the Special Subject courses without either having had the field work of the first year's instruction, or its equivalent in actual social experience.

All courses of the second year involve, unless otherwise stated, two lecture hours per week throughout the year. Seminary work will so far as possible be provided in the courses under A.

A.

*18. SOCIAL EVOLUTION.

Primitive society, types and stages. Early kinship and marriage relations. Family, clan, tribe, and nation. The evolution of custom and law. The evolution of property—the village community and its supersession. Early forms of government and state. The development of the great associations, family, church, state, the economic and cultural associations of modern society.

THE STAFF OF THE DEPARTMENT OF ECONOMICS.

*19. SOCIAL ECONOMICS.

Economic wealth and social welfare. An examination of the present economic organization in view of its direct and indirect influences on social welfare. Economic wealth as a necessary basis of all social welfare. Waste and conservation. Social and anti-social uses and forms of wealth. The control of the state over economic life, its object, conditions, and limitations. The state in relation to poverty, economic exploitation, private property, competition, combination, and free enterprise in general.

THE STAFF OF THE DEPARTMENT OF ECONOMICS.

*20. SOCIAL ETHICS.

The ethical development of society, and the relation of the individual to it; nature of social progress and the forces controlling it; the relation of the individual to the state, and the grounds of civic obligation; modern social conditions and problems in their ethical aspects.

(Department of Philosophy).

PROFESSOR ROBINSON.

21. SOCIAL PSYCHOLOGY.

Lectures will continue on the foundation laid in first year. Methods of social psychology. Investigation of individuals in social relations. Social and anti-social acts.

Norms and variations, psychopathies, feebleminded, insane. Problems of classification and investigation.

Clinical methods of investigating abnormals. Diagnosis. Intelligence tests, history and methods. Results. Tests of efficiency and their application to industrial management.

Social investigations, family and personal history. Problems of heredity. Environment. Disease. Crime. Tasks of social psychology.

(Department of Philosophy).

THE STAFF OF THE DEPARTMENT OF PSYCHOLOGY.

22. STATISTICS AND SOCIAL RESEARCH.

A course on methods of statistical analysis and study of statistical problems. Preparation and presentation of statistics. Interpretation of reports and statistics. Canadian social and statistical sources and information. Methods and results of important social inquiries.

(Department of Political Economy).

PROFESSOR CUDMORE.

B.

23. INDUSTRIAL INVESTIGATION.

A course for the training of persons for the work of investigation. It aims especially to prepare for the demands of government service. The course will be accompanied by fieldwork throughout the year, chiefly in connection with the actual problems and work of the Ontario government.

Preparation for the investigation. Gathering the information. Study of information. Defects of investigations. Consideration of special fields. Labour problems and industrial conditions. Institutional investigation. Canadian reports and investigations. Leading reports and investigations of other countries.

DR. RIDDELL.

24. THE IMMIGRANT IN THE COMMUNITY.

Study of immigrant races in their own lands, living conditions, causes of emigration. Immigration laws and agencies. Types of immigrants. Reaction and adaptation to conditions here. Children of alien races—how affected by these conditions.

Brief survey of the community "below the line", with special reference to racial composition. General characteristics; housing, labour conditions, standard of living, health, recreation.

The settlement and the immigrant. The function of the settlement as a force to conserve, stimulate, and develop the abilities and attainments of the immigrant.

MISS PARSONS.

25. MENTAL HYGIENE.

A more advanced course following course 15.

EXTENSION COURSES.

An extension course in Mental Hygiene was given in May and June 1919 at the request and with the assistance of the National Committee for Mental Hygiene. The registration of full and part-time students numbered eighty-nine and interest in the course was well sustained. Further extension courses will be given by the department to meet special needs which may arise in the various branches of Social Work.

In September, 1919, a course on Employment Management will be given by experts in this field. The syllabus of this course may be had upon application to the Department.

VISITS.

Weekly visits of inspection to public and private institutions in and near Toronto, which students of social work should know, form a regular part of the curriculum for the full-time students. The superintendents and heads of institutions usually give, on these occasions, helpful addresses on their work. The visits include government and private institutions of correction, charity, education and social work.

CERTIFICATE, DIPLOMA, AND CREDITS.

The Certificate of the University is awarded upon the satisfactory completion of the regular one year course. The Diploma is awarded upon the satisfactory completion of the second year. Students taking part-time work or special courses will receive credit for the work they complete.

FEES AND EXPENSES.

The tuition fee for the regular full-time course is $40 for each year. All fees are normally payable at the beginning of the course.

The fee for part-time students is $5 for each regular course covering two terms.

A limited number of students may find accommodation in the Social Settlements, where they have opportunity for participating in this form of work and making acquaintance with the conditions of the neighbourhood.

Lists of boarding houses may be obtained at the office of the Department.

INFORMATION.

For further information as to the instruction and other work of the Department of Social Service address the Secretary, Department of Social Service, University of Toronto. Those who are within reach will find a personal consultation at the office desirable.

SOCIAL SERVICE GRADUATES.

Allison, Mary L., B.A., C. 1918.....Toronto and York Patriotic Society
Apps, Elizabeth, B.A., C. 1915, D. 1918.....Trades and Labour Branch, Ontario Government
Armstrong, Ida, C. 1915.....The New York Hospital
Austin, Hattie M., C. 1916.....Oriole Road
Barr, Mary G., C. 1915.....42 Ben Lamond Avenue
Bell, Hazel, C. 1918.....Halifax Relief Commission
Black, Charlotte E., C. 1916.....104 Madison Avenue
Blain, Mary W., M.A., C. 1915.....42 Clarendon Avenue
Buckley, Mrs. C. P., C. 1918.....349 Markham Street
Casey, Jean M., C. 1916.....52 Prince Arthur Avenue
Chesnut, Effie C., C. 1917, D. 1918.....416 Sherbourne Street
Cowan, Margaret, C. 1919.....St. Christopher House
Craig, Mary A., C. 1915.....Red Cross Society, Malta
Currie, Christina, C. 1918.....Foxboro, Ont.
Davidson, Annie, C. 1918.....St. Christopher House.
Dickson, A. Irene, B.A., C. 1915.....Toronto Technical School
Dobbs, James Edward, C. 1919.....398 Summerhill Avenue
Doble, Florence, C. 1917.....Montreal, Que.
Dodds, A. Ethel, C. 1915.....St. Christopher House
Eddis, Dorothy W., C. 1916 (Mrs. A. Glen).....Kensington Apts., Crawford Street
Elder, Marion W., C. 1916.....Big Sister Association
Emery, Muriel Grace, C. 1919 81 Charles Street W.
Ferguson, Margaret, C. 1918.....38 Sproatt Avenue
Fleming, Mae, C. 1919.....Neighbourhood Workers Association
Geddes, Beatrice R., C. 1918, D. 1919.....Sarnia, Ont.
Gibson, Edith G., B.A., C. 1917 (Mrs. M. Staples).....Cavan, Ont.
Goforth, Paul, B.A., C. 1918.....Central Y.M.C.A.
Gould, Marjorie A., C. 1916.....88 Indian Grove
Grant, Ella, C. 1917.....Toronto General Hospital
Gregg, Marjorie W., M.A., C. 1915.....University Settlement
Ireland, Stella M., C. 1916.....Infants' Home and Infirmary, Toronto
Jackson, Philip, B.Sc., C. 1917.....50 Castle Frank Road
Kurata, Mrs. T. B., C. 1915.....Big Sister Association
Laughton, Mrs. M. E., B.A., C. 1918.....Big Sister Association
Lawrence, Janet R., C. 1917.....Big Sister Association

Lawson, Elsie Jane, C. 1919.....Milton, Ont.
Lovell, Ethel C. S., C. 1916.....Dominion Council Y.W.C.A.
Lowrie, Margaret Lucas, C. 1919.....Alexandra Industrial School
Mabee, Florence, C. 1917, D. 1918.....Provincial Labour Bureau
Macdonald, Frances W. G., C. 1919.....12 Bedford Road, Toronto
Macdonald, Jean C., C. 1917.....87 Spadina Avenue
Macdowell, Samuel, C. 1917.....Nashville, Tenn.
Maclennan, Katherine, B.A., C. 1917.....Dunbar Road
Martin, Caroline J., C. 1919.....Rosemont, Ont.
Masters, Leora May, B.A., C. 1919.....Windsor, N.S.
Matheson, Hannah G., B.A., C. 1916.....New Glasgow, N.S.
Matheson, Keith M., C. 1916.....Ottawa Setttlement
McFarland, Nellie L., C. 1919.....Memorial Institute
McFarlane, Mrs. M. E., M.A., C. 1916.....Department of Physiology, University of Toronto
McGregor, Agnes C., C. 1916.....Social Service Department, University of Toronto
McPhedran, Mary E., C. 1918.....Neighbourhood Workers Association
Mohr, N. Emily, C. 1916.....21 Summerhill Gardens
Morris, Robena Jean, C. 1919.....St. Christopher House
Moss, Elizabeth H., C. 1918.....Toronto General Hospital
Nairn, Margaret, C. 1917, D. 1919.....Dominion Council Y.W.C.A.
Power, Marjorie, C. 1917.....Toronto and York Patriotic Society
Rathbun, Jeanette, C. 1916.....Social Service Commission
Russell, Edith Kathleen, B.A., C. 1919.....Department of Public Health
Saunders, Josie G., C. 1916.....Goderich, Ont.
Scott, Jean D., C. 1919.....Big Sister Association
Scott, Mary M., C. 1918.....Milton, Ont.
Shepherd, Mary Helena, C. 1919.....University Settlement
Sims, Lola, B.A., C. 1918.....38 Laburnam Avenue
Skinner, Lilian A., C. 1916.....76 Madison Avenue
Sloane, Maria, C. 1918.....Pt. St. Charles Settlement, Montreal
Snyder, Olive M., C. 1917.....Neighbourhood Workers Association
Steward, Lulu, C. 1917.....Soldiers' Aid Commission
Stewart, Edmund P., C. 1916.....“The Canadian Baptist”
Sypher, Marjorie, C. 1916.....Toronto and York Patriotic Society
Tucker, Kathleen, B.A., C. 1915.....75 Roxborough Street, West
Van Munster, Mrs. R., C. 1917.....Vancouver Community House
Wetherell, Alice, C. 1915.....60 Hillcrest Drive
Wilson, Annie L., C. 1918.....The Juvenile Court

NOTE—“C” indicates Certificate, “D” indicates Diploma.

THE

CALENDAR

OF THE

University of Toronto

MISCELLANEOUS CURRICULA

1919-1920

UNIVERSITY OF TORONTO PRESS

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University of Toronto

MISCELLANEOUS CURRICULA

1919-1920

UNIVERSITY OF TORONTO PRESS

CURRICULUM IN LAW.

DEGREE OF LL.B.

Candidates for the degree of LL.B. must have:

(*a*) produced satisfactory certificates of conduct;

(*b*) matriculated in the Faculty of Law;

(*c*) passed the prescribed examinations;

(*d*) attained the age of twenty-one years.

Any person having the degree of Bachelor of Arts or of Master of Arts in the University of Toronto; or any person having the degree of Bachelor of Arts or of Master of Arts of another University, who has been admitted *ad eundem gradum* in the University of Toronto; or any person who has been admitted to the Bar by the Law Society of Upper Canada, or any person who has been admitted a student at law by the Law Society of Upper Canada, and who has passed his Intermediate Examinations as required by the said Society, provided that before he be entitled to receive the degree of LL.B. he shall have been admitted as a Barrister by the said Law Society, may enter the Faculty of Law at the Third Year of the course of study in that Faculty; but prior to presenting himself for the final examination in the course of the degree of LL.B. he shall pass in addition to the examinations of the Third and Fourth Years in the Faculty of Law, the following examinations in the Faculty of Arts, viz.:—

1. English Constitutional History: Honour examinations of the Second and Third Years.

2. English and Colonial Constitutional Law: Honour examination of the Third Year.

3. History of Roman Law: Honour examination of the Third Year.

4. History of English Law: Honour examination of the Third Year

5. Political Economy: Honour examinations of the Second or Third Year.

6. Jurisprudence: Honour examination of the Fourth Year.

7. Public International Law: Honour examination of the Fourth Year.

8. Canadian Constitutional History: Honour examination of the Fourth Year.

9. Federal Constitutional Law: Honour examination of the Fourth Year.

Undergraduates in the Faculty of Arts, who intend to proceed to the degree of LL.B., may take these examinations either during their Arts course or during the Third and Fourth Years of their Law course.

Matriculation.

The Matriculation examination in the Faculty of Law shall be identical with the examination of the First Year in the Undergraduate General Course:—English; Latin; one of Greek, French, German, Hebrew; a second optional language, *or* Mechanics and Physics *or* Biology; Algebra and Geometry; Ancient History *or* Trigonometry *or* Religious Knowledge.

First Year.

The subjects of examination in the First Year in the Faculty of Law are as follows:—

(*a*) Subjects of the General Course in the Faculty of Arts in which Pass standing will be required:—

1. English of the Third Year including English Composition.

2, 3. Any two of the following subjects of the Second Year, viz.:—Latin, Greek, French, German, Hebrew, Physics, Biology, Chemistry, Geology of which one must be a language.

4. History of the Second Year.
5. Ethics of the Third Year.
6. History of Philosophy of the Third Year.

(*b*) Subjects of the Political Science Course, in which Honour standing will be required:—

1. English Constitutional History of the Second and Third Years.
2. English and Colonial Constitutional Law of the Third Year.
3. Political Economy of the Third Year.
4. History of English Law of the Third Year.
5. History of Roman Law of the Third Year.

Second Year.

The subjects of examination in the Second Year in the Faculty of Law shall be as follows, viz.:—

(*a*) Subjects in the Faculty of Arts in which Pass standing will be required:—

1. English of the Fourth Year of the General Course.

2, 3. Any two of the following languages of the Third Year of the General Course:—Latin, Greek, French, German, Hebrew.

(*b*) Subjects of the Political Science Course, in which Honour standing will be required:—

1. Modern History of the Third Year.
2. Canadian Constitutional History of the Fourth Year.
3. Public Finance of the Fourth Year.
4. Political Philosophy of the Fourth Year.
5. Jurisprudence of the Fourth Year.
6. Public International Law of the Fourth Year.
7. Federal Constitutional Law of the Fourth Year.

Third Year.

1. Common Law	Broom's Common Law.
2. Personal Property	Williams.
3. Contracts	Anson.
4. Medical Jurisprudence	Reese.
5. Equity	Snell. Marsh [History of the Court of Chancery].
6. Theory of Obligation	Institutes of Justinian. Bk. 1, titles 1, 2, 3. Bk. 3, titles 13-39. Bk. 4, title 1. Mackenzie, Roman Law, Part III.
7. Canadian Constitutional Law.	Clement.

Additional subjects for candidates for the American Law Book Company's Prize:—

8. The Law of Companies. Lindley, Law of Companies.

9. Municipal Law. The Powers of Municipal Corporations to make contracts, and the manner in which they may contract; the general principles governing the exercise of these powers to pass by-laws; and their powers to create or establish highways and their liabilities with respect to the same when created.

The Act respecting Municipal Institutions (R.S.O. 1897, c. 223), and Biggar's Municipal Manual.

Each candidate for the American Law Book Company's Prize must present a thesis upon some subject relating to either of the additional subjects on or before the 31st of March in the year in which he presents himself for examination in his Third Year in the Faculty of Law. The subject of the thesis for the Prize for 1920 is "The advantages and disadvantages from a legal point of view and otherwise of the government of cities by Commission under special Act, as compared with the present system under the Municipal Act".

Fourth Year.

1. Law of Torts	Bigelow, English ed. Pollock.
2. Law of Real Property	Digby. Armour's Real Property.
3. Commercial Law	Blackburn on Sales, with notes of Canadian cases by Mr. Justice Russell, omitting Chapters 3 and 4 of Part II. Maclaren, Bills and Notes.
4. Private International Law	Westlake.
5. Corporations	Brice on *Ultra Vires*, Parts 1, 2 and 3.

6. Construction and Operation of Statutes	Hardcastle. Harris.
7. Criminal Law	Criminal Code and amendments, excepting as regards Procedure.
8. Domestic Relations	Everley, Parts 1, 2 and 3.

Each candidate for the degree of LL.B must present a thesis satisfactory to the examiners in Law, upon some subject embraced in the curriculum, on or before the 31st March in the year in which he presents himself for examination in his Fourth Year in the Faculty of Law, or on or before the said date in any subsequent year. The subject of the thesis will be prescribed by the Senate, and will be announced at least eight months before the date upon which it is due. An oral examination on the subject of the thesis may be required at the option of the examiners in Law. Candidates for the degree may defer presenting the thesis until a subsequent annual examination, in which case the fee for examination shall be $10.

Fees.

The following fees must be paid:—

For matriculation or entrance	$10.00
For each examination after matriculation	10.00
For each supplemental examination	10.00
For the degree of LL.B	20.00
For admission *ad eundem gradum*, LL.B	20.00

A candidate will not be admitted to an examination unless he has paid all the fees due from him. A candidate who fails to pay his examination fees on or before the fifteenth of March—the last day for receiving fees prior to the May examination—must pay an additional fee of one dollar.

A candidate who fails to send his application for examination by the day appointed for receiving such applications must pay an additional fee of one dollar.

Examinations.

The examinations will take place in the month of May.

Every student who purposes presenting himself at any examination is required to send to the Registrar, not later than March 15th, a paper (according to a printed form which will be provided on application) stating his standing, and whether he is a candidate for Honours or otherwise.

Candidates who at any examination have failed in not more than two subjects may, with the consent of the Senate, present themselves for examination in such subjects at the next ensuing Supplemental examinations.

Undergraduates below the Fourth Year in the Faculty of Law, who have been rejected or who have been prevented from attending the Annual examinations in May by sickness or other cause beyond their control, may, with the consent of the Senate, present themselves in September, at the time of the Supplemental examinations in Arts.

Candidates in the Faculty of Law shall not be required to pass an examination on those subjects in which they have already passed the required examination in the University of Toronto, or an equivalent examination in the course of studies prescribed by the Law Society of Upper Canada.

Candidates who have taken the course at the Law School are required to present to the Registrar a certificate from the Secretary of the Law Society, showing the subjects in the Law School curriculum on which the candidate has passed examinations at the said school, and such certificates shall entitle the candidate to exemption from examination on the subjects mentioned in said certificate, where said subjects are included in the University curriculum in Law.

Subject of Thesis.

The following is the subject for Thesis for candidates for LL.B. for the year 1920, viz.:—A comparison of Trusts in English Law with similar interests under the Roman Law.

DEGREE OF LL.M.

Candidates for the said Degree must have been admitted to the Degree of Bachelor of Laws, must be of the standing of one year from admission to the Degree of Bachelor of Laws, must have presented a thesis satisfactory to the examiners in Law, and to the special examiners of such thesis appointed by the Senate, on some branch of law or of the history or philosophy of law, and must have passed the following examinations in the Faculty of Law, viz.:—

1. Roman Law: Sohm, Institutes of Roman Law.

2. Criminal Law: Stephen, History of the Criminal Law (omitting chapters on History of Procedure, Summary Jurisdiction, and Indian Criminal Law).

3. History of English Law: Pollock and Maitland, History of English Law.

4. English Constitutional Law: Gneist, History of the English Constitution; Select Cases in Constitutional Law—Broom, Constitutional Law, Part II. (Relation of the Subject to the Executive); and Part III. (Relation of the Subject to Parliament); Todd, Parliamentary Government in England.

5. Canadian Constitutional Law: Lefroy on Regislative Power in, Canada; and subsequent reported cases on the subject.

6. Public International Law: Freeman Snow's leading cases on International Law; Lawrence, International Law.

7. Jurisprudence: Bryce, Studies in Jurisprudence; Hall, Foreign Jurisdiction of the British Crown; Salmond, Jurisprudence.

8 Civil Code of Quebec.

The thesis must be sent to the Registrar in typewritten or printed form, not later than the thirty-first day of March.

The Senate may appoint special examiners for the whole or any part of the work prescribed for examinations for said degree.

The fee for the said degree shall be thirty dollars ($30.00).

Certificates of Honour.

Certificates of Honour will be given at each examination to those students who have been placed in Honours. The fee for such certificates shall be one dollar.

Prizes.

The Edward Thompson Company's Prize of the first twenty-five volumes of the American and English Annotated Cases will be awarded to that undergraduate of First Year standing who as a candidate for the examination of the Second Year submits the best thesis on some branch of the law of Personal Property, of Contracts or of Trusts. The subject for 1919 is "A study of the law of Trusts in relation to personal property".

The Canada Law Book Company's Prize of a set of Halsbury's Laws of England will be awarded to that graduate of this University who having completed his course in the department of Political Science, and having passed the First Year examination at Osgoode Hall, has written a thesis on some portion of the work prescribed in the first examination at Osgoode Hall. The subject for 1920 is "A comparative study of the constitutions of Canada and Australia".

The award of these two prizes shall be made to the candidate who obtains the highest aggregate number of marks on all the subjects of the second examination and also the highest number of marks for the thesis and is recommended for the Prize by the regular and special examiners in Law. The thesis shall be sent to the Registrar, in typewritten or printed form, not later than the thirty-first of October, signed by the candidate's pseudonym, and shall be submitted to the special examiners for adjudication and report to the Senate. The special examiners shall, before the day of examination, fix the maximum number of marks to be allowed, and the minimum number of marks which must be obtained on the thesis. In determining the merit and value of the thesis, the examiners shall attach special importance to the literary qualities, and to the amount of original thought, research and investigation, which have been shown by the candidate in his treatment of the subject of the thesis.

The American Law Book Company's Prize of a complete set of their Cyclopædia of Law and Procedure will be awarded to the successful candidate in the Third Year who shall have obtained the highest aggregate number of marks in all the subjects of examination prescribed in the cur-

riculum for said year, and also in the additional subjects of the Law of Companies and Municipal Law, prescribed for the said Prize, including a thesis upon some subject relating to either of those two additional subjects, and who shall be recommended for said prize by the examiners in Law and by the special examiners appointed to examine the thesis submitted by such candidates.

The Edward Thompson Company's Prizes of the American and English Encyclopædia of Law and of the Encyclopædia of Pleading and Practice will be awarded to the candidates for LL.B. who shall have received the highest and second highest aggregate number of marks at the examination for that degree in the Faculty of Law in all the subjects prescribed for the Fourth Year, including the thesis upon a legal subject, required of such candidates, and who shall be recommended for the Prizes by the examiners in Law, and the special examiners appointed to examine the thesis submitted by such candidates.

The American Law Book Company's Prize of a complete set of their Cyclopædia of Law and Procedure will be awarded to the successful candidate for LL.M. who shall have obtained the highest aggregate number of marks at the examination for the said degree, including a thesis upon some branch of Law or of the history of philosophy of Law, and who shall be recommended for the said prize by the examiners in Law and by the special examiners to be appointed by the Senate to examine the theses submitted by such candidates.

Standards.

The standing for passing shall in the case of Arts subjects be fifty per cent., and in the case of the Law subjects be fifty per cent. on each subject of an examination, with an average of sixty per cent. on the whole. The standard for Honours shall be an average of seventy-five per cent. of the marks assigned to all the subjects of the Year.

Works of Reference.

American and English Annotated Cases, American and English Encyclopædia of Law, Cyclopædia of Law and Procedure, Encyclopædia of Pleadings and Practice, Halsbury's Laws of England, the English and Empire Digest.

CURRICULUM IN DENTISTRY.

DEGREE OF DOCTOR OF DENTAL SURGERY.

Matriculation.

A candidate for admission to the course in Dentistry will be entitled to the status of an undergraduate who possesses either of the following qualifications:

1. A certificate issued by the Ontario University Matriculation Board, of standing as for Junior Matriculation in the subjects of English, History, Mathematics, Latin and Experimental Science (Physics and Chemistry).

2. A certificate of Junior Matriculation or Normal Entrance with Latin of the Province of Ontario.

3. A certificate of matriculation in the Faculty of Arts of a British or Canadian University.

4. A certificate, accepted by the General Medical Council of Great Britain for registration as a student of Medicine or Dentistry.

5. A degree in Arts (not being an honorary degree) from some recognized University.

The following certificates may be accepted pro tanto for matriculation:—

Ontario—Normal Entrance and Entrance to the Faculties of Education as well as certificates of the same standards under titles no longer in use.

Prince Edward Island—First or Second Class Teacher's Licence. Honour, First or Second Class Ordinary Diplomas, as issued by the Prince of Wales College, P.E.I.

Nova Scotia—Teacher's Licence, Grade A or B, or Grade A or B Leaving Certificate; issued by the Council of Public Instruction.

New Brunswick—Superior and Grammar School Teachers' Licences; also Normal Entrance Certificates of the First and Second Class.

Quebec—Associate in Arts.

Manitoba—First and Second Class Teachers.

Saskatchewan—First and Second Class Teachers.

Alberta—Grade 11 or 12.

British Columbia—Intermediate or Senior Grade.

A certificate of standing as an unconditioned student of a University in the United States, may be accepted, but it must be on the basis of a complete four years' course in a High School accredited by the said University. Such a certificate must include Latin for at least two years.

Certificates other than those previously mentioned will be considered in determining the status of applicants as undergraduates.

Curriculum.

Freshman Year.

Lectures.—Inorganic Chemistry, Osteology, Dental Anatomy, Comparative Dental Anatomy, Histology, Prosthetic Dentistry, Physiology, Applied Dental Physics, Embryology, Biology.

Laboratory.—Dental Anatomy, Histology, Prosthetic Dentistry, Applied Dental Physics.

Sophomore Year.

Lectures.—Organic and Physiological Chemistry, Anatomy, Physiology, Materia Medica, Elementary Bacteriology, Operative Dentistry, Prosthetic Dentistry, Crown and Bridge, Special Histology.

Laboratory.—Dissection, Inorganic, Organic and Physiological Chemistry, Operative Dentistry, Prosthetic Dentistry, Crown and Bridge, Physiology.

Junior Year.

Lectures.—Bacteriology and Pathology, Pharmacology, Anaesthetics, Exodontia, Operative Dentistry, Preventive Dentistry, Orthodontia, Prosthetic Dentistry, Metallurgy, Crown and Bridge, Dental Economics, Applied Dental Physics.

Laboratory.—Applied Dental Physics, Bacteriology and Pathology, Metallurgy, Operative Dentistry, Prosthetic Dentistry, Crown and Bridge, Orthodontia, Infirmary, Exodontia.

Senior Year.

Lectures.—Medicine, Surgery, History of Dentistry, Ethics, Dental Jurisprudence, Electro-Therapeutics, Dental Pathology, Orthodontia, Operative Dentistry, Prosthetic Dentistry, Crown and Bridge, Preventive Dentistry, Dental Economics, Exodontia, Anaesthesia and Analgesia, Peridontia.

Laboratory.—Exodontia, Infirmary, Pathology, Operative Dentistry, Prosthetic Dentistry, Crown and Bridge, Orthodontia, Minor Surgery, Medicine and Surgery (General Hospital).

Examinations and Standards.

The standard for pass for all years and subjects and all sections or parts of subjects shall be 50 per cent. of possible marks.

A student in any year, to obtain credit for any of the examination, must pass in at least a majority of the subjects of the year.

All examinations are connected under the joint direction of the Board and of the University. The term work done by the student in each subject may count as high as 50 per cent. of the examination, and is reported by the instructor in charge of each subject. The report of the examiners may count as high as 50 per cent. of the examination.

Supplemental Examinations.

Supplemental examinations are held at convenient times for removing conditions. All conditions must be removed before a student may enter a second higher year than the one in which he is conditioned, but he must attempt to remove the condition at the first opportunity provided. Applications, together with the fee to write or take a supplemental examination, must be in the hands of the Registrar of the University at least fifteen days before the date set for the examination.

Fees.

In addition to the foregoing fees payable to the R.C.D.S., the following fees are payable to the Bursar of the University of Toronto:

Matriculation Fee	$5.00
For each annual examination (four)	5.00
Supplemental examination for each paper (maxim. $10)	5.00
For Degree of Doctor of Dental Surgery	10.00
Admission ad eundem gradum	20.00

Concurrent Course in Medicine and Dentistry.

Students who are matriculants in the Faculty of Medicine and in the Department of Dentistry may take a concurrent course in Medicine and Dentistry which will extend over seven years.

Students taking this course will pass the regular University examinations in the subjects of the Medical curriculum from year to year as they are completed in the Medical Faculty, and in the final Dental subjects of the curriculum in Dentistry from year to year as they are completed in the Royal College of Dental Surgeons.

Students taking this concurrent course, who have fulfilled all the requirements for the degree of M.B., and who have successfully passed the examination in the Dental subjects of the curriculum in Dentistry, including Dental Materia Medica and Therapeutics, shall receive the degree of D.D.S.

The fee payable to the University shall be $50 per year for the first four years, and $150 per year for the last three years, together with the several laboratory fees.

CURRICULUM IN PHARMACY.

DEGREE OF BACHELOR OF PHARMACY.

Matriculation.

Candidates for the degree of Bachelor of Pharmacy must either:—

1. Possess a degree in Arts (not an Honorary degree) from some recognized University; or

2. Have already matriculated in the Faculty of Arts in this or some other University in Canada; or

3. Be matriculants in the College of Physicians and Surgeons of Ontario; or

4. Have passed the Junior or Senior Teachers' examinations of the Education Department of Ontario in which Latin has been taken.

Provided always that all candidates registered as apprentices of the Ontario College of Pharmacy, or who have received the diploma of the College of Pharmacy up to the first day of July, A.D. 1898, shall be admitted as matriculants in the Department of Pharmacy on payment of the registration fee of five dollars.

Regulations.

Undergraduates (candidates for the degree) resident in the Province of Ontario must have complied with all the requirements prescribed from time to time by the Council of the Ontario College of Pharmacy for admission to examination for a diploma licensing to practise Pharmacy in Ontario, and must have received from the Registrar of the Ontario College of Pharmacy a certificate of having passed the final examination of that College.

Candidates for the degree, not resident in Ontario, must have devoted at least four years (not being engaged in any other business) to the study of Pharmacy, being apprenticed during that time to a regularly qualified Pharmaceutical Chemist; must have attended the full courses of lectures embracing all the subjects of the curriculum, the length of each course being not less than that required from time to time by the Council at the Ontario College of Pharmacy, and including practical work of some College of Pharmacy recognized by this University; the last of which courses must be taken at the Ontario College of Pharmacy.

All candidates who have, prior to August 15th, 1892, received the diploma of the Ontario College of Pharmacy will not be required to conform to the above, but will be allowed their degree on passing the examination on the subjects hereinafter given.

Examinations.

Candidates for the degree must pass an examination to be held in the month of May of each year—hour and date of commencing to be hereafter given—must present to the Registrar satisfactory certificates covering all the requirements relating to undergraduates as given above, and of having passed the final examination of the Ontario College of Pharmacy.

The subjects of the examination shall be as follows:—

1. Botany and Microscopy.
2. Theory and Practice of Chemistry and Toxicology.
3. Materia Medica, including Posology and Pharmacognosy.
4. Theory and Practice of Pharmacy, including interpretation of Prescriptions and Dispensing.

These examinations shall be partly written, partly oral and partly practical.

No candidate shall be considered as having passed the examination who has not obtained fifty per cent. of the marks allotted; nor shall a candidate be considered as having passed in any subject who has not obtained at least forty per cent. of the marks allotted to such subject.

Fees.

For matriculation or registration of matriculation	$5.00
For annual examination (each)	10.00
For each practical examination	0.50
For the degree of Phm.B.	10.00

No fee shall be charged for transference from any Faculty of this University to the Department of Pharmacy.

CURRICULUM IN AGRICULTURE.

ADMISSION TO THIRD YEAR STANDING.

An Associate of the College is admitted to third year standing and allowed to proceed with the work of Third and Fourth Years:—

(1) Provided he has taken rank in his Associate Course satisfactory to the College Staff, 60 per cent. of the marks in English and 50 per cent in general proficiency.

NOTE.—In addition to the above, candidates intending to take the *Agriculture Option* must present satisfactory evidence of having spent at least two years at practical work with a good farmer; those entering for the *Dairy Option* must have spent one season at practical work in a cheese factory and one in a creamery, or have spent one season in a cheese factory or creamery, and have taken the full course (cheese and butter) in a Dairy School, or have spent at least two years on a dairy farm; and those entering for the *Horticulture Option* must have spent at least one year at practical work with a good fruit grower, market gardener, or florist.

A graduate or undergraduate in Arts and Science of any reputable University, having had the necessary training in farm work, may proceed to the degree, upon presenting certificates of standing satisfactory to the head of the department to which the certificate relates, and approved by the President, and passing examinations on subjects not covered by his certificates.

The work done previously by such a candidate will be accepted *pro tanto* for any part of the work prescribed for the degree, provided he submits to the President all credentials and records of standing from other institutions.

Third Year (for the B.S.A. Degree).

Attendance and Term Work for Third and Fourth Years.

NOTE.—Any candidate before being passed on any examination must have attended at least seventy-five per cent. of the lectures and seventy-five per cent. of the laboratory periods in each subject, and must have obtained at least fifty per cent. of the marks for term work in each department and sixty per cent. in all departments together. "Attendance" and "Term Work" rank as separate subjects.

The Course of Study.

Botany	Cryptogamic. Plant Physiology.
Chemistry	Inorganic. Qualitative Analysis. Organic. Quantitative Analysis.
English	Composition. Literature. Public Speaking.
Entomology.	
French.	
Geology.	
Physics	Heat. Cold Storage. Meteorology.
Animal Husbandry.	
Bacteriology.	
Horticulture.	
Economics.	

NOTE.—The time allotted to each subject *per week* is indicated as follows:

"L" represents a lecture period of 50 minutes.

"Lab." represents a laboratory period of one hour and a half.

1. BOTANY.—[2 "L" and 2 "Lab." fall and winter terms.]

(1) Physiology and Histology.—Duggar, Plant Physiology, or Percival, Agricultural Botany.

(2) Cryptogamic.—A study of the chief types, Coulter, Barnes and Cowles, Vol. 1.

2. CHEMISTRY.—[3 "L" and 4 "Lab." fall and winter terms.]

(1) Historical Chemistry.—(8 lectures.)

(2) Inorganic Chemistry.—Text-book, Newth.

(3) Qualitative Analysis.—A comprehensive laboratory course during the fall term. Text-book: Mason, Notes on Qualitative Analysis.

(4) Organic Chemistry. — Text-book: Cohen, Theoretical Organic Chemistry.

(5) Quantitative Analysis. — Laboratory practice in gravimetric and volumetric analysis. Reference: Lincoln and Walton, Elementary Quantitative Analysis.

Reading.—As assigned.

3. ECONOMICS.—[2 "L" fall and winter terms.] A study of the conditions of Canadian Agriculture. The factors of Agricultural Production. It is the aim to familiarize the student with the resources of Canada, and with the part played by Canada in the world's food supply. Markets, Transportation, International Trade and Tariffs are discussed with special reference to Canada. A study of the farmer's relation to the general problems of industrial development.

4. ENGLISH.—[3 "L" fall term.]
[3 "L" and a "Lab." winter term.]

(*a*) Journalism.—Lectures and practice in the writing of news, press bulletins, etc.

(*b*) Public Speaking.—A continuation of the practice in public speaking as outlined under second year English.

(*c*) English Poetry from 1600-1830. Text: Representative Poetry.

(*d*) English Prose.—Macaulay: Essay on Johnson; Addison, Sir Roger de Coverley; Swift, Gulliver's Travels.

5. ENTOMOLOGY.—[2 "L" and 2 "Lab." fall and winter terms.]

(*a*) Economic Entomology.—Detailed study of injurious and beneficial insects and the best methods of preventing the ravages of the former. Sanderson, Insect Pests of the Farm, Garden and Orchard; Slingerland and Crosby's Manual of Fruit Insects.

(*b*) Systematic Entomology.—A laboratory and lecture course in the identification and classification of insects. Each student is required to collect and mount at least 150 insects representing as many orders as possible. From these collections the Department reserves the right to appropriate specimens of any species not represented in the College collection. Sanderson's and Jackson's Elementary Entomology; Comstock's Manual for the Study of Insects.

6. FRENCH.

(*a*) Grammar.—Selected lessons from the Ontario High School French Grammar.

(*b*) Translation.—Part I, Super's French Reader.

7. GEOLOGY.—[2 "K" fall and winter terms.] Economic Geology of Canada, Archaean, Glacial and Stratigraphical Geology and Physiography. Works of reference: Scott, An Introduction to Geology; Chamberlain and Salisbury, Geology; Reports of the Geological Survey of Canada and of the Bureau of Mines of Ontario.

8. PHYSICS.—[2 "L" and 2 "Lab." fall and winter terms.]

(*a*) Heat, Text: Scarlet, Course in Heat; (*b*) Meteorology. Reference: Milham. (*c*) Ventilation and Cold Storage. Texts: Ventilation; Cooper, Practical Cold Storage.

9. BACTERIOLOGY.—[2 "L" fall term.] Bacteriological technique; cultural studies of various molds, yeasts and bacteria; microscopic preparations; staining methods; bacterial analysis of milk, water, soil, diseased plants, etc.

10. ANIMAL HUSBANDRY.—[1 "L" fall and winter terms.] For students intending to take the Agricultural Option during the Fourth Year. Text: Vaughan, Types and Market Classes of Live Stock.

11. HORTICULTURE.—[1 "L" fall and winter terms.] For students intending to take the Horticultural Option during their Fourth Year.

NOTE.—Students intending to take the Fourth Year shall select their option not later than the 1st of April in the Third Year, after consultation with the head of the department concerned; and shall then notify the President of their selection and its approval by the Head above referred to.

Fourth Year (for the B.S.A. Degree.)

One of the following options:—

1. Agriculture
2. Bacteriology.
3. Biology.
4. Chemistry and Physics.
5. Dairy.
6. Horticulture.

Standard for Pass and Honours in Fourth Year Examinations.

Major Subjects: I. 75 per cent.
II. 66 per cent.
III. 40 per cent.

Each student must obtain an average of 50 per cent. on all major subjects.

Minor Subjects: A. 75 per cent.
B. 50 per cent.
C. 33 per cent.

Fees.

Each examination	$10.00
Degree	10.00

Thesis.

Each fourth year student is required to prepare a Thesis on some branch or department of the work in his special course under the direction of the Professor or Instructor in whose department the work is done. The subject is to be chosen not later than the end of the third year, and submitted for the approval of the Staff on or before April 1st. The Thesis must be based on original work. It must be typewritten on letter-sized paper of good quality, allowing one and a half inches on the left side of each page and one inch on the other three sides to allow for binding. Maps, charts, photographs, etc., must have one inch margin on the left side. All theses must be handed to the Committee of Adjudication on or before the 1st of April of the fourth year.

Agriculture Option.

See note under "Admission to Third Year Standing", page 15 of this calendar; also Attendance and Term Work for third and fourth year students, page 16.

NOTE.—The time allotted to each subject per week is indicated as follows:

"L" represents a lecture period of 50 minutes.

"Lab." represents a laboratory period of one hour and a half.

MAJORS:

1. ANIMAL HUSBANDRY.— [2 "L" and 4 "Lab." fall term.]
[2 "L" and 5 "Lab." winter term.]

(*a*) Horses, cattle, sheep and swine. Characteristics of the principal breeds; lectures and practical work in judging. Texts: Plumb, Types and Breeds of Farm Animals; Curtis, Live Stock Judging and Selection.

(*b*) Pedigrees and live stock catalogues.

(*c*) Principles and practice of stock breeding. Text-books: Davenport, Principles of breeding; Marshall, Breeding Farm Animals; Punnett, Mendelism; Mumford, The Breeding of Animals.

(*d*) Feeding and Management of Live Stock. Text-book: Henry and Morrison, Feeds and Feeding.

(*e*) Poultry.—[1 "Lab." fall term, 1 "L" spring term.] Buildings, feeding and management; principal breeds. Text: Lippincott, Poultry Production.

Each student shall be required to operate at least one incubator, to rear one brooder of chicks to four weeks of age, to feed and care for one pen of laying hens for one month, and to crate, fatten, kill and dress one dozen birds.

Reading.—As assigned.

2. FIELD HUSBANDRY.—[2 "L" fall term and 2 "L" and 1 "Lab." winter term.]

Advanced course in field crops: systematic breeding of cereals, legumes, etc.; agricultural organization throughout the world; experiment stations and their work; results of field experiments; practical judging of seeds, roots, potatoes, grasses and clovers; study of fanning mills, grading machines, generators, seed testers, etc.

Reading.—As assigned.

3. CHEMISTRY.—[3 "L" and 4 "Lab." fall term.]
[2 "L" and 4 "Lab." winter term.]

(*a*) Soil Chemistry.—As outlined in Chemistry and Physics Option, Section 1, Part B.

(*b*) Animal Chemistry.—As outlined in Chemistry and Physics Option, Section 1, Part D.

(*c*) Laboratory Work.—A comprehensive course of analysis of soils, manures, fodders, condimental and stock foods.

(*d*) Chemistry of Insecticides and Fungicides [Minor].

Reading.—As assigned.

4. PHYSICS.—[2 "L" and 2 "Lab." fall and winter terms.]

(*a*) Climatology as under Physics, Section A, in the Chemistry and Physics Option.

(*b*) Soils as under Physics, Section B, in the Chemistry and Physics Option.

(*c*) Tillage and Drainage as under Physics, Section C, in the Chemistry and Physics Option.

(*d*) Light as under Physics, Section D, in the Chemistry and Physics Option.

Reading.—As assigned.

5. THESIS.—As outlined on page 18.

MINORS:

1. ENGLISH.—[2 "L" fall and winter terms.]

(*a*) Journalism.—A continuation of the work outlined in the third year course; technical reports, interviews, editorials, etc.

(*b*) English Poetry.—The Victorian Era. Text: Manley's English Poetry.

(*c*) English Prose.—Carlyle, Heroes and Hero Worship; Ruskin, Crown of Wild Olive; Stevenson, Selected Essays.

2. ECONOMICS.—[1 "L" fall and winter terms.] Instruction in the principles underlying Economics, especially Rural Economics, Land, Capital, Labour, Taxation, Money, etc. Ways of getting a living—farming as distinguished from other ways. Management as a factor in Agricultural Production. Problems of Buying and Selling, Credit, Distribution of the agricultural income. The social side of rural life. Co-operation.

3. BACTERIOLOGY.—[2 "L" fall term.] Infectious diseases of animals, modes of infection, prevention and eradication; bacterial diseases of plants; micro-organisms in the soil; the relation of bacteria to the handling of milk and other phases of bacteriological science as met with on the farm. Text: Marshall, Microbiology.

4. FRENCH.—[3 "L" fall and winter terms.]

(*a*) Translation.—Parts II and III in Super's French Reader.

(*b*) Grammar.—Selected lessons from the Ontario High School French Grammar. (Course of Third Year continued).

(*c*) Sight Translation.—Selected passages from Super's Anecdotes, Faciles.

5. BOTANY.—[1 "Lab." fall term.]
[2 "L" winter term.]

(*a*) Systematic botany: grasses, weeds and forage crops; (*b*) fungi and fungous diseases; (*c*) Field Botany.—The identification of common trees, weeds and field plants. The examination in this subject will include the identification of trees, weeds and common plants found in the neighbourhood of the College. Texts: Percival, Agricultural Botany; Duggar, Fungous Diseases of Plants.

COLLECTIONS.—*Fifty specimens (25 of which are to be grasses or forage plants, and 25 to be fungi, representing the diseases of vegetables and cereal crops), specimens to supplement the collections of the second and third year, and not to repeat them.*

Fourth Year (for the B.S.A. Degree).

Bacteriology Option.

See note under "Admission to Third Year Standing", page 15 of this calendar; "Attendance and Term Work" for third and fourth year students, also time allotted to each subject per week.

MAJORS:

1. BACTERIOLOGY.—[12 "L" and 6 "Lab." fall and winter terms.]

(*a*) Microscopical Methods.—A study of the morphology of micro-organisms by the examination of living cultures and various staining methods: preparation of morbid specimens, embedding of tissues and section cutting.

(*b*) Cultivation Methods.—Apparatus, principles of sterilization, preparation of culture media, and various means employed in the cultivation of different types.

(*c*) Systematic and Physiologic Bacteriology.—Chemical composition, nutrition, circumstances affecting growth, products of growth, chromogenic, zymogenic, toxic and pathogenic bacteria. Studies in symbiosis, metabiosis and antagonism. Studies in enzymes.

(*d*) Examination of Air, Water, Soils and Foods.

(*e*) Hygienic Bacteriology.—Infectious diseases; anthrax, symptomatic anthrax, tuberculosis, glanders, typhoid fever, hog cholera, diphtheria, actinomycosis, pyemia, fowl and insect diseases; toxins and antitoxins, susceptibility and immunity, attenuation of virus, protective inoculation; serum-therapy.

(*f*) Fermentation Bacteriology.—Micro-organisms of fermentation, enzymes; fermentations: alcoholic, acetic, lactic, butyric, ammoniacal, putrefactive; nitrification, dentrification.

(*g*) Agricultural Bacteriology.—Relation of micro-organisms to tillage of the soil; management of the compost heap; bacteria and the farm water supply; disposal of sewage; bacteria and pure milk production.

(*h*) Dairy Bacteriology.—The relation of micro-organisms to dairying; the fermentation of milk; pure culture system in butter and cheese making; pasteurization and sterilization; the bacteriological analysis of milk, butter and cheese; sanitary milk production; diseases conveyed by dairy products.

2. Chemistry of Fruits, Vegetables and Fermentations. As in Sect. I. Part F. Chemistry and Physics Option.

3. THESIS.—As outlined on page 18.

MINORS:

1. ENGLISH.—As in the Agriculture Option.
2. ECONOMICS.—As in the Agriculture Option.
3. FRENCH.—As in the Agriculture Option.
4. BOTANY.—[2 "L" and 2 "Lab." fall term.] Section 1, Parts D and E, in the Biology Option.

5. ZOOLOGY.—[2 "L" and 1 "Lab." fall and winter terms.] Section 2, Parts A, B, D, F, in the Biology Option.

6. PHYSIOLOGY.—As in 3 F, Biology Option.

7. CHEMISTRY.—Animal Chemistry as in Section 1, Part D, Chemistry and Physics Option.

Fourth Year (for the B.S.A. Degree).

Biology Option.

See note under "Admission to Third Year Standing", page 16 of this calendar; "Attendance and Term Work" for third and fourth year students; also time allotted to each subject per week.

MAJORS:

1. BOTANY.—[3 "L" and 6 "Lab." fall term.]
[5 "L" and 6 "Lab." winter term.]

(*a*) Systematic.—Lectures and Laboratory work on the chief orders of flowering plants; including grasses and the identification of grass, clover, and other seeds. *A mounted collection of 100 plants and 50 specimens of weed seeds.* Texts: Gray, New Manual of Botany; Strasburger.

(*b*) Structural and Histological.—Lectures and laboratory work on the organs of the plant; mounting, examining and drawing vegetable cells and tissues. Strasburger; Chamberlain; Stevens, Plant Anatomy.

(*c*) Physiological.—An advanced seminary course. Strasburger; Green; Duggar; Jost.

(*d*) Fungi and Plant Pathology.—(i) *Laboratory* course with occasional lectures in which are studied the injurious fungi affecting orchard, garden, greenhouse, and farm crops; (ii) *a collection of 50 injurious fungi.* Texts: Reports and Bulletins; Duggar, Fungous Diseases of Plants; Stevens and Hall, Diseases of Economic Plants.

(*e*) Cryptogamic.—Laboratory study of the chief types covering the thallophytes, bryophytes and pteridophytes. Coulter, Barnes and Cowles, Vol. 1; Strasburger; Campbell; Massee, Text-book of Fungi.

Reading.—As assigned.

2. ZOOLOGY.—[2 "L" and 2 "Lab." fall term.]
[4 "L" and 4 "Lab." winter term.]

(*a*) Invertebrate.—A systematic study of the lower animals with reference to structure, function, development and relationship, the student using as types the amoeba, paramecium, vorticella, sponge (commercial and grantia), fresh water hydra, corals, campanularian hydroid, tapeworm, liver fluke, starfish, earthworm, crayfish, spider, grasshopper and mussel.

Text-books: McMurrich, Invertebrate Morphology; Parker and Haswell, Invertebrate Zoology.

(*b*) Vertebrate.—This course is chiefly a study of comparative anatomy, the student using as types the amphioxus, fish, frog, snake, or turtle, pigeon, and cat or rabbit.

Text-books: Parker and Haswell, Vertebrate Zoology, Vol. II; Kingsley, Comparative Anatomy of Vegetables.

(*c*) Economic.—A lecture course on the identification, habits, life histories and economic importance of animals, giving special attention to Ontario forms.

Reading.—Jordan and Enerman, American Food and Game Fishes; Bulletins and Reports of U.S. Department of Agriculture, Ontario Fish and Game Association, and Canadian Commission of Conservation, etc.

(*d*) Vertebrate Histology.—A laboratory course in the theory and use of the microscope and its accessories; the study of the animal cell, its multiplication and contents, and the normal histology of the various tissues and organs of vertebrates with particular reference to Mammalia.

Text-book: Hill, Manual of Histology and Organography. Reference books; Piersol, Normal Histology; Stohr, Text-book of Histology; Clarkson, Text-book of Histology.

(*e*) Insect Histology, Physiology and Morphology.—A laboratory and lecture course on the anatomy and physiology of insects with special reference to biological aspects. Methods and practice in the preparation of microscopical sections of insect tissue and in photomicrography.

Reading.—Folsom, Entomology with reference to Biological and Economic Aspects. Packard, Text-book of Entomology.

(*f*) Animal Physiology.—The study of the functions of the different organs and parts. Lectures and demonstrations are given on the cell, blood, circulation, respiration, digestion and absorption, secretion and excretion, general metabolism and animal heat and force.

Text-book: Howell, Text-book of Physiology. Reference books: Kirke, Handbook of Physiology (Nineteenth English edition); American Text Book of Physiology.

3. ENTOMOLOGY.—[1 "L" and 2 "Lab." fall term.]
[2 "L" and 2 "Lab." winter term.]

(*a*) Systematic.—A laboratory course in the identification and classification of insects. Where material and literature will permit this classification is carried through to genera and species. Each student is required to collect and mount at least 300 insects representing as many orders as possible. This collection the student should have as thoroughly classified as time will permit. Comstock, Manual for the Study of Insects; Blatchley, Coleoptera of Indiana; Williston, North American Diptera; Blatchley, Orthoptera of Indiana.

(*b*) Economic.—A careful study of injurious and beneficial insects with special attention to the most practicable and economical methods of control of the former; study of spray mixtures, spray outfits, and best methods of spraying. Each student is required to work out for himself the life histories of at least five different species of insects; take careful records of all data obtained in so doing, and hand in these along with a concise typewritten account of each life history. He must also hand in

Riker mounts or other suitable cases containing the different stages of the insects reared. These will be retained by the Department. Sanderson, Insect Pests of Farm, Garden and Orchard; Slingerland and Croaly, Manual of Fruit Insects; Saunders, Insects Injurious to Fruits; O'Kane, Injurious Insects. Reports and Bulletins.

Reading.—As assigned.

4. Thesis.—As outlined on page 18.

Minors:

1. English.—As in the Agriculture Option.
2. Economics.—As in the Agriculture Option.
3. French.—As in the Agriculture Option.
4. Bacteriology.—As in the Agricultural Option.

Reading.—As assigned.

5. Chemistry of Insecticides and Fungicides.—
   [2 "L".]
   [4 "Lab". ½ winter term.]

Fourth Year (for the B.S.A. Degree).

Chemistry and Physics Option.

See note under "Admission to Third Year Standing", page 15 of this calendar, "Attendance and Term Work" for third and fourth year students, page 16; also time allotted to each subject per week.

Majors:

1. Chemistry.—[6 "L" and 8 "Lab." fall term.]
   [8 "L" and 8 "Lab." winter term.]

(*a*) Inorganic Chemistry.—Newth, Advanced course.

(*b*) Soil Chemistry.—Atmosphere, soils, reactions occurring in soils, fertilizers, the plant, its characteristics and relation to soil and atmosphere. Storer, Ingle, Hall.

(*c*) Organic Chemistry.—Lectures and preparation of organic compounds. Cohen, Organic Chemistry.

(*d*) Animal Chemistry.—Foods, their composition and digestibility; food constituents and their function; physiological value of the nutrients; selecting and compounding of rations. Armsby, Jordan, Ingle, Wolff, Kellner.

(*e*) Chemistry of Insecticides and Fungicides.—Short course dealing with the Chemistry and the preparation of the principal insecticides and fungicides.

(*f*) Chemistry of Fruits, Vegetables and Fermentations.

(*g*) Laboratory Work.

1. Qualitative Analysis. Text-book: Jones, Qualitative Chemical Analysis.
2. Volumetric Analysis. Text-book: Coblentz.
3. Polariscope and Sugar Determinations.

4. Analysis. Of water, soil, fertilizers, fodders, etc.

5. Preparation of Organic Compounds.

Reading.—As assigned.

2. PHYSICS.—[4 "L" and 4 "Lab." fall and winter terms.]

(*a*) Climatology.—A general study of conditions that influence climate; particular study of Canadian climate; climatic factors in relation to agriculture; climate limits in Canada for the agricultural and horticultural products. Text: Hann, Climatology.

(*b*) Soil Physics.—Movements of air and water in the soil; soil temperatures; conditions affecting tilth; analysis and microscopic examinations of types. References: Warrington, Physical Properties of the Soil. King, Soil Management; Soils, Lyon, Fippin and Buckman.

(*c*) Tillage and Drainage.—Spring and autumn tillage; relation of various implements to air, moisture, warmth and tilth of soil; management of different types of soil; principles of drainage; preliminary surveys; systems of drainage; preparing plans for drainage; principles and methods of irrigation. Reference: Elliott, Engineering for Land Drainage.

(*d*) Light.—Nature and measurement of light, velocity, reflection, refraction, diffusion, interference, spectrum, images, optical instruments.

(*e*) Logarithms and Trigonometry.—Theory and use of logarithms, trigometrical ratios, and relations between them; solutions of triangles. Texts: Hall and Knight, Higher Algebra; Hall and Knight, Elementary Trigonometry.

(*f*) Electricity.—Telephones, principles, installation and care; telegraphy, metallic circuit and wireless; generators, direct and alternating; transmission of electricity; motors, direct and alternating; electric lighting; wiring; installation of plants for farm use.

(*g*) Sound.—Nature, propagation, velocity, pitch, musical scales, laws of vibration, resonance, consonance, Doppler's principle; Thomson and Poynting. Sound.

3. THESIS.—As outlined on page 18.

MINORS.

1. ENGLISH.—As in the Agriculture Option.
2. ECONOMICS.—As in the Agriculture Option.
3. FRENCH.—As in the Agriculture Option.
4. FIELD HUSBANDRY.—[2 "L" fall and winter terms.] As outlined in Section 2: Major portion of Agriculture Option.

Fourth Year (for the B.S.A. Degree).

Dairy Option.

See note under "Admission to Third Year Standing", page 15 of this calendar; "Attendance and Term Work" for third and fourth year students; also time allotted to each subject per week.

MAJORS:

1. Dairy Husbandry.—[5 "L" and 6 "Lab." fall and winter terms.]

(*a*) Farm Dairy work and milk-testing, theory, practice and lectures, with Fleischmann, The Book of the Dairy.

(*b*) Lectures, in the winter term, with Stocking, Manual of Milk Products; Vanslyke and Publow, Science and Practice of Cheesemaking, Part III; Larsen and White, Dairy Technology.

(*c*) Laboratory course of experiments in cheese-making, butter making, cream separators and milk-testing, relating to the latest practices in dairy operations. Time amounting to two days a week, throughout the year, one being Saturday, will be devoted to this experimental work.

Reading.—As assigned.

2. Bacteriology.—[2 "L" fall term.]
[1 "L" and 6 "Lab." winter term.]

Dairy bacteriology, and such general bacteriology as is necessary for a thorough understanding of the work of dairying.

Reading.—As assigned.

3. Chemistry.—[2 "L" and 5 "Lab." fall term.]

(*a*) Dairy Chemistry.—(i) A chemical study of milk, butter, cheese, and the by-products of the dairy; (ii) Laboratory work, analysis of the products of the dairy, preservatives, adulterants, water and colouring material—Richmond.

(*b*) Animal Chemistry.—As outlined in the Chemistry and Physics Option, Section 1, Part D.

Reading.—As assigned.

4. Thesis.—As outlined on page 18.

Minors.

1. English.—As in the Agriculture Option.

2. Economics.—As in the Agriculture Option.

3. French.—As in the Agriculture Option.

4. Soil Chemistry.—[3 "L" fall term.] As outlined in the Chemistry and Physics Option, Section 1, Part B.

5. Field Husbandry.—[2 "L" fall term.] Advanced course in field crops, emphasizing hay, pasture and fodder crops. Lectures and laboratory work.

Fourth Year (for the B.S.A. Degree).

Horticulture Option.

See note under "Admission to Third Year Standing", page 15 of this calendar; "Attendance and Term Work" for third and fourth year students; also time allotted to each subject per week.

Majors:

1. Horticulture.—[6 "L" and 3 "Lab." fall term.]
[8 "L" and 2 "Lab." winter term.]

(*a*) POMOLOGY.

Lectures.—The theory and practice of nursery work and fruit growing; cost of production; systems of selling; systematic classification of Canadian fruits and identification of varieties.

Text-books: Waugh, Systematic Pomology; Beach, Apples of New York; Hedrick, Grapes of New York; Bailey, Principles of Fruit Growing; Bailey, Pruning Book; Bailey, Nursery Book; Card, Bush Fruits; Sears, Productive Orcharding; Kains, Plant Propagation; Brown, Fruit Tree Propagation.

Practical Work.—Stratification and planting of seeds and pits; budding, root and cleft grafting; making cuttings; pruning and spraying; picking, grading, packing; selection of fruit for exhibition purposes; judging; studies of varieties and commercial packages at exhibitions.

(*b*) VEGETABLE GARDENING.

Lectures.—Theory and practice of truck gardening under glass and out-doors; greenhouse construction and management. Canning factory crops and methods of canning; seed growing; spraying, fumigating, etc.

Practical Work.—Selection and testing of seeds; preparation of vegetables for exhibition and market; judging; greenhouse management. Text-books: Watts, Vegetable Gardening; Lloyd, Productive Vegetable Gardening; Corbett, Garden Farming.

(*c*) FLORICULTURE.

Lectures.—Theory and practice of commercial plant and flower production; plant Ecology relative to plant culture; culture of outdoor and indoor decorative plants; greenhouse management.

Demonstrations and Practical Work.—Propagation of special florist's crops; greenhouse management; visits to leading commercial establishments. Text-books: Bailey, Manual of Gardening; White, Principles of Floriculture; Bailey, Nursery Book; Robinson, The English Flower Garden.

(*d*) LANDSCAPE GARDENING.

Lectures.—History and development; principles underlying rural and civic improvement; planning public and private grounds, etc.

Practical Work.—Study of landscape materials; preparation of plans. Text-books: Waugh, Maynard; Van Rensselaer, Art out of Doors; Parsons.

(*e*) PLANT BREEDING.

Lectures.—Studies of theory and practice of plant improvement with special reference to fruits, flowers and vegetables. Text-books: Walter, Genetics; Punnett, Mendelism; Bailey and Gilbert, Plant Breeding.

Reading.—As assigned.

2. BIOLOGY.—[4 "Lab." fall and winter terms.]

(*a*) Plant Pathology.—Identification and classification of fungous diseases affecting orchard, garden and greenhouse crops, prevention and remedies. A collection of 50 injurious fungi required. Texts: Duggar, Fungous Diseases of Plants; or Stevens and Hall, Diseases of Economic Plants.

(*b*) Economic Entomology.—Special study of injurious and beneficial insects, especially those affecting fruit, vegetables and green-house crops. Study of mouth parts, ovipositors and external anatomy; life histories and treatment; spray mixtures and methods of spraying. Each student is required to collect specimens of at least 40 of the injurious insects studied, to mount these neatly and place labels on them with the name and the date and place of capture. The student is also required to work out for himself the complete life history of at least two species of insects, to preserve the different stages in some suitable case, such as a Riker mount, and hand these into the Department along with an orderly and concise typewritten record of the life history. Such mounts and records will be retained by the Department.

(*c*) Plant Histology and Physiology.—An advanced seminary course dealing particularly with the histology and physiology of horticultural crops. Texts: Duggar, Plant Physiology; Green, Vegetable Physiology.

3. CHEMISTRY.

(*a*) Chemistry of Insecticides and Fungicides.—[2 "L" and 4 "Lab." ½ winter term.]

(*b*) Chemistry of Fruits, Vegetables and Fermentations.—[2 "L" and 4 "Lab." ½ winter term.]

Reading.—As assigned.

4. THESIS.—As outlined on page 18.

MINORS:

1. SYSTEMATIC BOTANY.—[1 "Lab." fall and winter terms.]

Lectures and laboratory work on the chief orders of flowering plants, with special references to cultivated forms. *A mounted collection to be made of 100 cultivated plants.* Text-book: Gray, Field, Forest and Garden Botany; with Leavitt's Outlines.

2. PHYSICS.—[2 "L" fall and winter terms.]

Soil Management.—Movements of air and water in the soil; soil temperature; conditions affecting tilth; spring and autumn tillage; management of different types of soils; principles of drainage.

3. SOIL CHEMISTRY.—[3 "L" and 2 "Lab." fall term.]—As under Chemistry, Part 1, Section B, in the Chemistry and Physics Option.

4. ENGLISH.—As in the Agriculture Option.

5. ECONOMICS.—As in the Agriculture Option.

6. FRENCH.—As in the Agriculture Option.

7. POULTRY.—As in the Agriculture Option.

Summary of Amended Regulations.

For a Specialist's Certificate in Science and Agriculture.

The following is a summary of the amended Regulations prescribing the qualifications for a Specialist's certificate in both Science and Agriculture; further details are given in the Syllabus of the Summer School Courses for 1918.

1. A First-Class Grade A or a High School Assistant's certificate granted on the Science option under the Regulations of 1917, with the degree of B.S.A., after the prescribed course at the Ontario Agricultural College, or,

2. A Specialist's certificate in Science with, in addition, courses in Agriculture as follows:

(1) At the Agricultural College the two Summer School courses for an Intermediate certificate in Agriculture (including a course in Farm Mechanics) and a third Summer School course in (*a*) Applied Science as it relates to Agriculture; (*b*) Field Husbandry; (*c*) (1) Animal Husbandry; and (2) a problem in research covering one or two years subsequent to the three years' course and being a condition of the granting of a Permanent certificate.

CURRICULUM FOR DIPLOMA IN PHYSICAL TRAINING.

A diploma will be granted to students of the University who shall have completed to the satisfaction of the Senate the following courses for teachers of Physical Training:—

First Year.

Theory:

Anatomy—Composition and classification of bones; classification of joints, description of movable joints; varieties, origin, insertion and action of muscles; anatomy of circulatory, respiratory, digestive and nervous systems.

Physiology—Oxidation and waste, metabolism; mechanism of respiration; physiology of muscle; function of digestive juices; lymph; nutrition and absorption; animal heat.

First Aid—Shock, wounds, bleeding, burns, exposure to cold, frost bite, fractures, sprains, dislocations, choking, foreign bodies in eye and ear, unconsciousness, fainting, apoplexy, heatstroke, epilepsy, hysteria, poisons, bandaging.

Practice:

For Men—Mutual instruction in calisthenics, dumb bells, wands, clubs and freehand; elementary exercises on the horse, mats, vaulting bar, and buck; indoor games: basket ball, indoor baseball and volley ball and elementary gymnasium games as tag, follow the leader; playground games—outdoor athletics: starting, sprinting, running, broad jump, high jump, shot put, hurdles; swimming.

For Women—Elementary Swedish exercises; corrective exercises; marching tactics, figure marching; exercises and drills with wands, dumb bells and clubs; exercises on vaulting horse, suspended ladder, parallel bars, Swedish stall bars, parallel rings; junior technique of dancing, rhythmic steps, aesthetic, folk and national dances; ball, singing and miscellaneous active games; swimming.

Second Year.

Theory:

Hygiene—School, dwelling and gymnasium ventilation; personal hygiene; baths and bathing; immunity.

Physiology of Exercise—Combustion, fatigue, breathlessness, stiffness, overwork, effect of training, mental work.

Anthropometry—Card index system, value of measurements, average physique, ideal physique, instruments, prescription of exercise.

Practice:

FOR MEN—Mutual instruction in calisthenics; first and second grade exercises on the horse, mats, parallel bars, horizontal bar, bar, ladder, rings.

Outdoor Games: baseball, hockey, lacrosse, rugby, soccer.

Swimming: life saving methods, Schafer method of resuscitation; Boxing, Bayonet and Singlestick, Playground games.

FOR WOMEN—Continuation of Swedish Exercises; corrective exercises; marching tactics, figure marching; advanced exercises and drills with wands, dumb bells and clubs; Exercises on apparatus, vaulting horse and buck, vaulting bar; parallel bars, suspended travelling rings, Swedish stall bars; senior technique of dancing, aesthetic, classic rhythmic movement, folk and national dances; gymnastic, ball, and miscellaneous games; basket ball; swimming.

Third Year.

Theory:

ANTHROPOMETRY—Laws of growth; comparative measurements; height, weight; lung capacity; acceleration and retardation of growth.

PHYSICAL DIAGNOSIS—Normal body, detection of defects, method of examining heart, lungs, inspection palpation, percussion, auscultation.

PRESCRIPTION OF EXERCISE—Exercise as a therapeutic agent according to needs of the individual.

Practice:

FOR MEN—Mutual instruction in calisthenics; second and third grade exercises on the horse, mats, parallel bars, horizontal bar, rings; advanced boxing and fencing; wrestling; swimming, life saving methods, diving; further practice in indoor and outdoor games for coaching and officiating purposes.

FOR WOMEN—Continuation of Swedish exercises and gymnastics; remedial exercises and medical gymnastics; marching tactics; apparatus; fencing; single stick drill; dancing; swimming, and life saving; dancing, senior technique, solo and interpretive dances.

Fourth Year.

Theory:

PRESCRIPTION OF EXERCISE—Remedial gymnastics; spinal curvature; special apparatus; massage and thermal agents.

PHYSICAL DEPARTMENT METHODS—Organization, administration, gymnasium construction and equipment, swimming pools, playgrounds, extension work.

HISTORY OF PHYSICAL EDUCATION—

Practice:

For Men—Pedagogy: Common faults in teaching, assignment of exercise for classes of various grades; nomenclature: calisthenics, apparatus; gymnastic and athletic competition: rules of competition scoring; practical extension work: supervision of classes outside the University.

For Women—Pedagogy: Supervision of classes outside of the University; mutual instruction in Swedish exercises and gymnastics; calisthenics; apparatus, technique of dancing; marching tactics; gymnastic and athletic games; continuation of class instruction in artistic drills; fencing; swimming and life saving.

Text Books and Works of Reference: Barton, Physical Training; Corsan, At Home in the Water; The Syllabus of Physical Exercises for Elementary Public Schools (Strathcona Trust); Hastings, Manual for Physical Measurements; Seaver, Anthropometry; Le Grange, Physiology of Exercise; Gray, Anatomy; Fisher, Physiology; Poore, Medical Gymnastics; Lovett, Lateral Curvature; Gymnasti Nomenclature (Y.M.C.A.); Skarstrom, Gymnastic Kinesiology; E. Burchenal, Folk-Dances and Singing Games; E. Burchenal, The Dances of the People; Marè Hofer, Popular Folk Games and Dances; Louis H. Chalif, Text-Book of Dancing, Part I and II; J. Brancroft, Games for the Playground, Home, School, and Gymnasium; Magazines, American Physical Education, Review, Playground.

VETERINARY SCIENCE.

The course leading to the Degree of Bachelor of Veterinary Science (B.V.Sc.) shall on and after the first of November, 1916, extend over a period of four academic years, of not less than seven months each.

The three years' course for the Degree of Bachelor of Veterinary Science is provided only for those who registered as candidates for the degree prior to the first of November, 1916.

MATRICULATION.

Candidates for admission to the Course in Veterinary Science must submit either:—

1. A certificate of admission to the Middle School, *i.e.*, have completed successfully two years in a High School or Collegiate Institute of Ontario;
2. A Normal Entrance or Junior Matriculation Certificate of Ontario;
3. A certificate, equivalent in standard, of any Province of Canada, of any part of the British Empire or of the United States;
4. Certificates other than those mentioned will be considered by the Senate in determining the status of applicants as undergraduates.
5. A certificate of having passed a special entrance examination in English Grammar and Competition, Spelling and Dictation, Reading, English Literature, British and Canadian History and Geography, Arithmetic.

This examination may be held annually on the first Wednesday and Thursday of September at Charlottetown, Halifax, St. John, Montreal, Toronto, Winnipeg, Regina, Saskatoon, Edmonton, Calgary, Vancouver, Victoria and such other centres as may be approved from time to time by the Senate.

CURRICULUM.

Candidates for the degree shall ordinarily complete the courses of instruction and Examinations of the first, second and third years at the Ontario Veterinary College.

Candidates may be admitted from a recognized Veterinary College on conditions to be determined in each case by the Senate.

The subjects of examination at the close of the fourth year are as follows:

Veterinary Medicine and Surgery
Infectious and Contagious Diseases of Animals
Obstetrics and Hygiene of Breeding Animals
Animal Husbandry
Veterinary Materia Medica and Therapeutics
Pathology
Bacteriology
Meat and Milk Hygiene
Jurisprudence and Veterinary Sanitary Service Laws.

Examinations at the end of the Fourth Year shall be conducted by examiners appointed by and under regulations approved by the Senate.

The standard of passing shall be fifty per cent in each subject with an average of sixty per cent. of the total number of marks assigned to the subjects.

The first class Honour standard is seventy-five per cent. and the second class sixty per cent.

Any student failing in not more than three of the above subjects may take supplementary examinations in these subjects, and upon passing the same shall be entitled to receive the degree.

Upon the successful passing of the examinations in the above subjects the students shall be entitled to receive the Degree of Bachelor of Veterinary Science, (B.V.Sc.)

DOCTOR OF VETERINARY SCIENCE.

A graduate holding the Degree of Bachelor of Veterinary Science desiring to proceed to the Degree of Doctor of Veterinary Science, shall by the first of January apply to the Senate for permission to undertake special research in a scientific laboratory or in some designated field of work allied to the live stock industry, and upon permission being obtained he shall carry on special research and present a thesis on or before the first of May, and upon the said thesis being approved by the Senate, the Degree of Doctor of Veterinary Science shall be conferred upon the said graduate, but only after the expiration of twelve months from the time of conferring the Degree of Bachelor of Veterinary Science.

University of Toronto

ANNOUNCEMENT OF GRADUATE COURSES

1919-1920

UNIVERSITY OF TORONTO PRESS

University of Toronto

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Registrar.....James Brebner, B.A.
Bursar.....Ferdinand Albert Mouré, Esq.
Librarian.....Hugh Hornby Langton, M.A.

Note:—*All communications or enquiries must be addressed to The Secretary, Board of Graduate Studies, University of Toronto, Toronto.*

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1919-1920.

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GENERAL REGULATIONS.

Admission.

1. Advanced courses of instruction and facilities for research are offered to students who are graduates in Arts of any University or College of recognized standing, or who, by the attainment of a University degree in some other Faculty, are found to be qualified to pursue such courses, or to undertake research in an approved subject.

2. Admission to these advanced courses, or to the privileges of research, does not in itself imply admission to the candidacy for a higher degree.

3. Application for admission must in each case be made to the Secretary of the Board of Graduate Studies not later than the 5th of October in each year. The applicant for admission should state his degrees, the department in which he graduated, and the courses he wishes to pursue.

Registration.

4. Every graduate student shall, in each year of his course, register his name with the Secretary of the Board of Graduate Studies, and with the department or departments in which the courses of instruction he desires are given, or in which he wishes to pursue research; and such registration shall be completed not later than the 20th of October—unless a relaxation of this rule be specially granted by the Board of Graduate Studies.

5. A graduate of this or another University, who has been appointed a Fellow of this University, shall be considered as admitted to registration at the commencement of the session for which the Fellowship is awarded to him.

Degrees.

6. The Degrees which the University of Toronto offers to graduate students are those of Master of Arts, Doctor of Philosophy, and Doctor of Medicine.

7. The Degree of Master of Arts is given to those who, after registration as graduate students, have pursued for a period, which varies according to the requirements in each case, advanced courses of instruction, outlined below, and have satisfied all the requirements; or, who have, as shown in each case by the presentation of a thesis, successfully completed an investigation on some special subject approved by the Board of Graduate Studies. In either case the degree is granted for special attainments in the work undertaken by the graduate student in order to qualify for the degree.

8. The Degree of Doctor of Philosophy is given to those who have shown high attainments in some special field of learning, not only by examination, but also by the completion of an investigation, the results of which are an original contribution to scholarship or to scientific knowledge.

NOTE—For certain departments, the nature of this investigation is more fully defined in the description of their courses.

9. The Degree of Doctor of Medicine is given to a Bachelor of Medicine of this University, on the presentation of a thesis embodying the results of an original investigation in an approved subject pertaining to any department of Medicine, conducted and completed by the candidate himself. It is essential that the thesis should give a summary of the literature of the subject, and be a distinct contribution to knowledge in the department.

REGULATIONS FOR THE DEGREE OF MASTER OF ARTS.

10. A candidate for the Degree of Master of Arts must be a graduate of this or another University, who has been regularly admitted and registered as a graduate student in this University.

11. A graduate of a faculty, other than Arts, of this or another University may be accepted as a candidate on such condition as the Board of Graduate Studies may determine.

12. The Board of Graduate Studies, in accepting a graduate of another University, or of another faculty, as a candidate for this Degree, shall, on the basis of his qualifications, assign him for the purposes of clause (16) below, either to the class of Bachelor of Arts in an Honour Course, or of Bachelor of Arts in the Pass Course.

13. If not registered as a graduate student at the beginning of the academic year, as provided in the regulations given above, the candidate shall not be eligible for the degree in the following June.

14. The application of a registered graduate student to be admitted as a candidate for the degree, together with a statement indicating the course of study proposed or the subject of the thesis suggested, should be sent to the Secretary of the Board of Graduate Studies not later than the 15th of November, for the approval of the department concerned and of the Board of Graduate Studies.

15. Attendance during one session is obligatory on candidates for the Master's Degree; but the Board of Graduate Studies may dispense with such attendance if the department, or departments, concerned, from direct knowledge of the candidate's work, recommend such dispensation.

16. After the observance of the requirements already indicated, candidates may proceed to the Degree of Master of Arts as follows:

I. BACHELORS OF ARTS IN AN HONOUR COURSE.

(*a*) By the pursuit for at least one year of an approved course of study and the passing of a satisfactory examination therein. A course of study shall not be approved by the Board unless (1) it is a continuation of a course previously pursued for graduation, or (2) it has been recommended by the department concerned on account of other special qualifications possessed by the candidate. In this latter case the course will normally extend over at least two years.

(*b*) By presenting a thesis embodying the results of some special study or investigation and adjudged to be of sufficient merit. The thesis shall be accepted only on the approval of the department or departments concerned. The candidate shall be required to pass an examination, written or oral, or both written and oral, conducted by the department or departments concerned, on the subject of the thesis and on his general knowledge of the subject of the department or departments. This examination shall not be held earlier than six months after the date of registration, and a printed or typewritten copy of the thesis submitted must be presented to the Secretary of the Board of Graduate Studies at least two weeks before the Examination takes place. The thesis must be presented not later than the 1st of May, in order that the candidate may be eligible for the Degree in the following June.

II. BACHELORS OF ARTS IN THE PASS COURSE.

(*a*) By the pursuit for at least two years, under the direction of one department, of an approved course of study and the passing of a satisfactory examination therein. No course of study shall be approved by the Board unless it is based on courses which have been taken for at least three years in the undergraduate course.

(*b*) Under exceptional circumstances only, the Board of Graduate Studies may permit a Bachelor of Arts in the Pass Course to proceed to the Degree of Master of Arts by thesis, in accordance with the regulations in clause 16, I (*b*). The candidate must be of at least two years' standing as Bachelor of Arts.

17. Graduates in Arts of this University, who have fulfilled all the requirements for the Degree of Doctor of Philosophy, may, on payment of the fee for the Degree of Master of Arts, be admitted to that Degree without further examination. Graduates in Arts of another University, or graduates in other Faculties of this or another University, who have fulfilled all the requirements for the Degree of Doctor of Philosophy, may, on special recommendation to that effect by the departments concerned, also be admitted to the Master's Degree without further examination, on payment of the fee for that Degree.

REGULATIONS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

18. The candidate must be a graduate in Arts of this or another University, who has been regularly admitted and registered as a graduate student in this University, but graduates in other Faculties of this or another University may be accepted as candidates on such conditions as the Board of Graduate Studies may determine.

19. The candidate shall, as a registered graduate student, have pursued in this University for at least three years, under the direction of some one department, an advanced course of study, which must be approved by the Board of Graduate Studies. Exemption from one of the three years required may be granted by the Board of Graduate Studies, on the report of the department concerned, to a candidate who has furnished satisfactory evidence of having pursued for at least one year a course of advanced study in his major subject (vide section 24) at another University, or who, at graduation as Bachelor of Arts in this University, has obtained First Class Honours in a special course, covering one year of advanced study, approved by the Board of Graduate Studies.

20. On special request the University of Toronto will facilitate the making of arrangements by a student whereby the work of one year may be taken at another University.

21. The application for admission as a candidate for the Degree, accompanied by a statement of the course of study and the subject for investigation proposed, shall be submitted to the Board of Graduate Studies during the first year of registration or as soon thereafter as possible.

22. Application for examination may be made at any time by graduate students who have been registered as candidates for the Degree of Doctor of Philosophy during a period of not less than three years.

Under exceptional circumstances application for examination may also be made by students who have been registered as graduate students without reference to this degree, provided:

(*a*) That the time during which they have been so registered is not less than three years.

(*b*) That the Department in which they have worked recommends the application.

(*c*) That they qualify by transferring their names to the registry of students proceeding to the Degree of Doctor of Philosophy and by paying the required fees.

23. The course shall include the study of a special subject, termed the major subject, and of two other subjects, termed the minor subjects, Only one minor subject shall be selected from the group of subjects of the department which includes the major subject. The time devoted to the two minor subjects should not exceed two-thirds of that required for the major subject.

24. The candidate shall have an adequate knowledge of French and German.

25. The candidate shall present, either during his course of study or at the completion of it, a thesis embodying the results of an original investigation, conducted by himself, on some approved topic selected from his major subject.

26. The candidate shall, at a time to be determined by the Board of Graduate Studies, undergo written and oral examinations, both on his major subject and on his minor subjects, conducted by the departments in which the major and minor subjects are included. The examiners may dispense with written examinations in one or both minor subjects provided they are satisfied, from the candidate's record, that he has a competent knowledge of such subject or subjects. Such dispensation must be reported to the Board of Graduate Studies.

27. The acceptance of the thesis shall be determined by the Board of Graduate Studies on the report of the department which includes the major subject. This report shall state, in terms to be approved by the Board, whether the thesis complies with the conditions prescribed by this University, and, in the judgment of the department, is worthy of publication, and whether the department recommends that the thesis be accepted in conformity with the requirements for the Degree of Doctor of Philosophy.

28. On the acceptance by the Board of Graduate Studies of the thesis submitted by a candidate, and of favourable reports from the departments in which his major and minor subjects have been taken, he shall be deemed to have fulfilled the requirements for the Degree in so far as his knowledge of those subjects is concerned. The candidate shall then be required to undergo an oral examination before the Board of Graduate Studies in order to establish his general fitness for the Degree.

29. Before the Degree is conferred upon a candidate he must, subject to the approval of the Board of Graduate Studies, make such arrangements as will ensure the publication of the thesis, and the presentation within a specified time of such number of copies as the Board of Graduate Studies may direct. Each printed copy shall, on its title page, contain the words "A thesis submitted in conformity with the requirements for the Degree of Doctor of Philosophy in the University of Toronto".

30. On the report of the Board of Graduate Studies that all the requirements have been complied with, the Senate may, either at a Convocation or at any one of its regular sessions, confer on the candidate the Degree of Doctor of Philosophy.

REGULATIONS FOR THE DEGREE OF DOCTOR OF MEDICINE.

31. A Bachelor of Medicine will be eligible for the Degree of Doctor of Medicine on the following conditions:

(i) At least one year must elapse between the date of conferring the degree of Bachelor of Medicine and that of conferring the degree of Doctor of Medicine.

(ii) He must present an approved thesis embodying the results of an original research conducted by the candidate in any department of Medicine.

(iii) The subject of the thesis must be submitted to the Secretary of the Board of Graduate Studies for the approval of the Board at least five months before the degree is conferred.

(iv) The degree may be conferred at a Convocation or at any regular meeting of the Senate.

FEES.

Master of Arts:—

Registration and tuition	first year	$25.00
Each subsequent year		5.00
Examination		10.00
Degree		10.00

Doctor of Philosophy:—

Registration and tuition	first year	$25.00
Registration and tuition	(second and third years)	45.00
Examination		25.00
Degree		25.00

If the course is extended over more than three years a registration fee of $5.00 only for each additional year is required.

If the candidate is required to repeat either examination an additional fee of $10.00 will be charged.

Graduate Students not proceeding to a degree—

	For the Session.	For the Term.
For a course in any one subject, including registration	$10.00	$5.00
For a course in more than one subject, each subject including registration	9.00	5.00
Maximum Fee	45.00	23.00

Doctor of Medicine:—

Examination of Thesis	$10.00
Degree	10.00

The fee for registration shall be paid by the candidate immediately upon being notified of admission to the course.

The fee for tuition shall be paid by the 31st of October in each year. There will be a penalty of $1.00 per month for delay in payment beyond that date.

If any or all of the courses taken by a Graduate student are later accepted by the Board of Graduate Studies as part of the student's course of instruction for the Degree of Master of Arts or Doctor of Philosophy, an additional fee shall be charged, if necessary, to bring the total fees paid for registration and tuition up to the amount paid by a candidate registered for the Degree of Master of Arts or Doctor of Philosophy.

Candidates for the Degree of Master of Arts shall pay $25.00 for registration and tuition for one year of the course. If the course is extended over more than one year a registration fee of $5.00 only must be paid for each additional year.

FELLOWSHIPS.

The University offers annually to qualified students intending to pursue advanced graduate study a number of fellowships, each amounting to at least $500, the holders of which will, for the year of their tenure, be entitled to free tuition. The majority of these are confined to special Departments, but those specified in paragraph (1.) below are open to students in all Departments, who are proceeding to the degrees of M.A. and Ph.D. Others are called Tutorial Fellowships because the holders of them are required to give a certain amount of instruction in the class-room or laboratory in elementary subjects, but the time so devoted is small and, accordingly, the holders are given opportunity to pursue their special advanced courses of study.

These Fellowships are as follows:

1. SPECIAL OPEN FELLOWSHIPS.

There are four of these available to students who undertake to pursue graduate work in any of the courses offered by the Departments of this University for the degrees of M.A. and Ph.D. under the authority of the Board of Graduate Studies. The value of each Fellowship is $500 for one year with free tuition. If the holder of a Fellowship gives satisfactory evidence of progress in his work during the year, he may receive the renewal of it for a second year. Preference will be given to candidates who are graduates of the Universities of Canada outside Ontario, in the first instance to those from the West. Applications together with details of undergraduate courses taken and certificates therefor should be addressed to the President of the University not later than the 1st of June.

2. SPECIAL DEPARTMENTAL FELLOWSHIPS.

(*a*) Alexander Mackenzie Research Fellowships, two in number, of $500 each for research in the Department of Political Science, and awarded to graduates of any university, on the recommendation of a committee. Applications for these Fellowships should be addressed to the Head of the Department not later than the 1st of June.

(*b*) James H. Richardson Fellowship, of $500, awarded in Anatomy by the Senate on the recommendation of the Professors of Anatomy, Biology and Surgery. Applications for this Fellowship should be addressed to the Professor of Anatomy.

(*c*) The George Brown Memorial Fellowship, of $500, awarded in alternate years to the graduate in Medicine of the University of Toronto, who has distinguished himself most in the subjects of Anatomy, Physiology, Biochemistry, Pharmacology, Pathology and Pathological Chemistry, in the undergraduate course. The holder of the

Fellowship is expected to devote himself to research in one of the laboratories of the University on some subject bearing on the advancement of medical science.

(*d*) The American Alumni Research Fellowship, of $500, established through the generosity of the graduates of the University of Toronto resident in the United States. This Fellowship may not be awarded during the coming session.

3. MEDICAL RESEARCH FELLOWSHIPS.

These were established in 1913 through the generosity of a number of the leading citizens of Toronto, for the promotion of Clinical and Laboratory Research in the Department of Medicine. Each is tenable for three years, providing that the progress in research made by the holder is satisfactory. The value of the Fellowships for the first year is $750, and in the senior years may be as much as $1,000 and $1,500. Applications for these Fellowships should be addressed to the Secretary of the Medical Research Fellowship Committee.

4. TUTORIAL FELLOWSHIPS.

There are eight of these Fellowships, the holders of which are required to give part of their time to elementary instruction in the classroom or laboratory, and are also to engage in advanced study and research.

These Fellowships are annually awarded in the following Departments: two in Mathematics, three in Physiology and Biochemistry, one in Pathology, and two in Botany.

These Fellowships are open to graduates of any university and the appointments to them are made, on the recommendation of the staffs in the respective Departments, by the Board of Governors.

DEMONSTRATORSHIPS, ASSISTANT DEMONSTRATORSHIPS, AND ASSISTANTSHIPS.

Certain of the Departments of Science offer annually to qualified graduates of any University positions as Demonstrators, Assistant Demonstrators, or Assistants, which involve instruction to elementary laboratory classes, but only a certain number of hours per week in each case is required, and the instructors are accordingly free to pursue advanced study and research with the object of qualifying for the degrees of M.A. and Ph.D.

The number of these posts varies from year to year, but for the session 1918-1919 they were, according to Departments, as follows:

Physics, nine Assistant Demonstratorships; Chemistry, five Assistantships; Botany, two Demonstratorships and two Assistantships; Pathological Chemistry, one Assistantship.

Applications for these positions should be addressed to the Head of the Department in each case. The honorarium is $500 or more.

ANNOUNCEMENT
OF
COURSES

In the following announcement of courses certain Minors are suggested as suitable to accompany each of the major subjects. In many cases students are advised to take the Minors indicated, but it is always to be understood that other Minors may be arranged by consultation between the student and the staffs involved.

CLASSICS.

The departments included under the Classics are four in number: Greek, Latin, Greek and Roman History, Comparative Philology and Sanskrit.

Degree of Master of Arts.

A student who is proceeding to the degree of Master of Arts in accordance with the general regulations must consult the staff in Classics as to the selection of suitable courses of study.

Degree of Doctor of Philosophy.

A graduate student, proceeding to the degree of Doctor of Philosophy, may select any one of the following divisions as his Major:

Greek Literature.
Latin Literature.
Greek and Roman History.
Greek and Roman Philosophy.
Comparative Philology and Sanskrit.

All candidates for the degree of Doctor of Philosophy whose major subject lies within the Classics shall give evidence of proficiency in Greek and Latin Prose Composition, or (with the consent of the staff in Classics) in one or other of them, and to this end shall take such courses as the staff may prescribe.

A graduate student will be required, before entering upon more advanced courses, to have taken such of the courses marked below by an asterisk as the staff in Classics may recommend, having regard to the range of work already completed and to the nature of the course of study he expects subsequently to pursue.

No absolute rule is laid down as to the selection of the Minors to be chosen by a candidate whose Major is in one of the classical departments, but one of them at least should be chosen from the remaining subjects in these departments, and the other, if chosen from some different department should have a definite relation to the candidate's major subject. Where both minor subjects are chosen from the departments included under the Classics, one half of the courses constituting the two minor subjects should consist of courses not marked by an asterisk.

Courses of Instruction.

I. GREEK.

*1—Greek Prose Composition.
*2—Plato, Republic, Bks. I-IV.
*3—Plato, Republic, Bks. V-X.
*4—Greek Drama (Aeschylus, Agamemnon; Sophocles, Antigone, Oedipus Rex; Euripides, Bacchae; Aristophanes, Birds, Clouds, Frogs).
*5—Aristotle, Ethics, Bks. I-IV, X (6-9).
*6—Aristotle, Poetics.
*7—History of Greek Philosophy (Introductory Course).
8—Plato, Phaedrus, Phaedo, Gorgias. Professor Hutton.
9—Plato, Laws. Professor Hutton.
10—Pindar. Mr. W. D. Woodhead.
11—Aeschylus. Professor Owen.
12—Aristophanes. Professor Langford.
13—Aristotle, Ethics, Bks. V, VI, VII. Professor Brett.
14—Demosthenes, De Falsa Legatione, and Aeschines, De Falsa Legatione with life and career of the orator. Professor Carruthers.
15—The Political and Ethical Thought of Plato. Professor Robertson.
16—History of Greek Philosophy from Plato to Plotinus. Professor Brett.
17—The Relation between the Metaphysics of St. Augustine and Plato. Professor Carr.
18—Graeco-Roman Literary Criticism with special study of Longinus. Professor Dale.
19—The Greek Conception of the Function of Art in the State. Professor Milner.
20—Greek Archaeology. Professor Carruthers.

[See also Greek and Roman History, 1, 2, 4, 9, 10, 11].

II. LATIN.

*1—Latin Prose Composition.
*2—Roman Satire.
*3—Virgil, Eclogues, Georgics, Aeneid.
*4—Horace.
*5—Roman Elegy.
*6—Cicero, De Finibus, Bks. I, II; Lucretius, Bk. I.
7—The Interpretation of Virgil, with special reference to poetic diction. Professor Bell.
8—The Minor Poems of Virgil. Professor DeWitt.
9—The poets of the Silver Age, with special study of Lucan. Mr. Duff.
10—Roman Public Life, with the study of selected speeches of Cicero. Professor Smith.
11—Roman Literary Criticism with special reference to Cicero's rhetorical writings. Professor DeWitt.

12—Roman Stoicism, with special study of Cicero, De Finibus, Bks. III, IV. Professor Robertson.

13—Cicero, Academica, and the Eclectic Philosophy. Professor Robertson.

14—Roman Archaeology. Professor Kirkwood.

15—Latin Epigraphy. Professor DeWitt.

16—Roman Religion. Professor DeWitt.

[See also Greek and Roman History, 5, 6, 15, 16, and Greek 17].

III. GREEK AND ROMAN HISTORY.

*1—Thucydides, Bks. I-III, VI, VII.

*2—Herodotus, Bks. VII, VIII, IX.

*3—Greek History, B.C. 454 to B.C. 399.

*4—Aristotle, Politics, Bks. I, II, III.

*5—Tacitus, Annals, Bks. I-VI, and the Principate.

*6—Cicero, Letters (Watson); Sallust, Catiline; Caesar, Civil War.

*7—Roman History (to death of Cicero).

*8—Roman Institutions.

9—Thucydides. Professor Sissons.

10—Aristotle, Politics. Professor Milner.

11—The Public Career of Demosthenes, with the study of De Corona and Aeschines' Contra Ctesiphontem. Professor Carruthers.

12—The Achaean League. Professor Duckworth.

13—The History of the Pentecontaëty. Professor Sissons.

14—The Letters of Cicero. Professor Milner.

15—The Second Punic War with a special study of Livy's Third Decade. Professor Kirkwood.

16—The Roman Commonwealth and its Dependencies, B.C. 168-78. Professor Duckworth.

17—Interpretation of Greek and Roman History to 476 A.D. Professor Milner.

[See also Latin 10].

IV. COMPARATIVE PHILOLOGY AND SANSKRIT.

*1—Comparative Philology.

2—Comparative Greek and Latin Syntax. Professor Bell.

3—Comparative Syntax continued, with special treatment of Moods and Tenses. Professor Bell.

4—Introduction to the study of Sanskrit. Professor Bell.

5—Advanced Course in Sanskrit. Professor Bell.

6—Introduction to Oscan and Umbrian. Professor Bell.

The following are the minor subjects offered in the Classics:*

A—Greek Literature: Greek, 2, 4, 6.
B—Latin Literature: Latin, 2, 3, 4, 5.
C—Greek History: Greek and Roman History, 1, 2, 3, 4.
D—Roman History: Greek and Roman History, 5, 6, 7, 8.
E—Greek Philosophy: Greek, 2, 3, 5, 7.
F—Comparative Philology and Sanskrit, 1, 2, 4.
G—Sanskrit: Comparative Philology and Sanskrit, 4, 5.
H—Greek and Roman Archaeology: Greek, 20; Latin, 14, 15, 16.

*For the courses constituting these minor subjects, equivalent courses may be substituted with the approval of the staff in Classics.

SEMITIC LANGUAGES.

Degree of Master of Arts.

Candidates for this degree are accepted under the general regulations

Degree of Doctor of Philosophy.

A candidate proceeding to the degree of Doctor of Philosophy in the department of Semitic Languages must give proof of his fitness for advanced study in this department either as being an honour graduate of the University of Toronto or as possessing an equivalent standing in some field of Semitic Philology in a recognized University or College.

A course of study must be elected by the candidate in consultation with the members of the department under whom it is proposed to pursue the major and minor subjects and must be submitted to and approved by the department.

The department will not recommend a student for the degree merely on the ground of faithful study for a definite period but only because of high attainment in such study manifested in the examinations and by the thesis.

The following divisions are offered as Majors:

Hebrew Language and Literature.
Aramaic Language and Literature.
Syriac Language and Literature.
Assyrian and Babylonian Language and Literature.
Arabic Language and Literature.

The following Minors are recommended for candidates taking a Major in this department:

Language cognate to the major subject.
Greek (Classical).
Philosophy.
Hellenistic Greek (Biblical and Patristic).

These Minors shall be chosen in accordance with section (22) of the general regulations. These recommendations do not prohibit other Minors being arranged between the candidate and the department. When a minor

subject is elected outside of the department, the candidate must obtain the consent of the department concerned to the choice of such Minor and he shall be subject to the regulations of that department in respect thereto. No student of this department shall be exempt from the written examination on more than one Minor.

Courses of Instruction.

1—Hebrew: Prophetical Literature of the Old Testament. One hundred and twenty-five hours.

2—Hebrew: Hebrew Poetical Literature. Seventy-five hours.

3—Assyrian: Elementary Course, Translation of inscriptions of Tiglathpileser I, Shalmaneser II, Sennacherib (1110—681 B.C.). Fifty hours. Professor Craig.

4—Assyrian: Advanced course, Translation of The Story of the Deluge, Ishtar's Descent to Hades, Hymns and Prayers. Fifty hours. Professor Craig.

5—Arabic: Elements of Arabic Language and Simple Texts. Fifty hours.

6—Arabic: Reading of representative selections from Arabic Literature. Fifty hours.

7—Syriac: Introductory Grammar and the translation of easy Prose. Fifty hours.

8—Aramaic: Introductory Palestinian Aramaic with translations from Daniel and Ezra, and the Targums. Fifty hours.

9—History of Israel. Fifty hours.

10—History of Hebrew Literature. Fifty hours.

11—History of Mohammedanism. Twenty-five hours.

12—Semitic Archaeology and Art. Twenty-five hours.

13—Hebrew Lyric Poetry. One hundred hours. Professor Cosgrave.

14—The Social Development of the Hebrews. Fifty hours. Professor Taylor.

15—The Hebrew Wisdom Literature. Fifty hours. Professor McLaughlin.

16—Hebrew Prophecy and Apocalypse. Fifty hours. Professor McLaughlin.

17—Semitic Philology. Comparative studies in the development of Word-formation in Hebrew. Twenty-five hours. Professor Craig.

18—Studies in Arabic Literature. Fifty hours. Professor McLaughlin.

19—Aramaic: The development of the Aramaic Dialects. Twenty-five hours. Professor Hooke.

20—Semitic Epigraphy. Twenty-five hours. Professor Hooke.

21—Syriac Patrology. Professor Hooke.

22—Advanced Assyrian. Continuation of Course 4. Fifty hours. Professor Craig

23—Hellenistic Literature. Fifty hours. Professor Taylor.

NOTE.—Courses 9 to 12 do not require a knowledge of Semitic Languages.

The following Minors are offered in this department:

Semitic Languages A—Course 1.
" " B—Course 2.
" " C—Courses 3 and 4.
" " D—Courses 5 and 6.
" " E—Courses 7 and 8.
" " F—Any two of Courses 9 to 12.
" " G—Any selection from Courses 13 to 22 involving not less than seventy-five hours instruction.

ENGLISH.

Degree of Master of Arts.

Students admitted as candidates for this degree must have graduated with Honours in English at this University, or give evidence of possessing similar qualifications. They are required to cover satisfactorily the work of three of the courses outlined below and to submit a dissertation on some subject connected with their work.

Degree of Doctor of Philosophy.

Students admitted as candidates for this degree in English are required to be in actual attendance, to cover satisfactorily the work of at least ten of the courses outlined below (or their equivalents), and to submit a thesis: this thesis must, in the opinion of the department, be worthy of publication. They shall further be required to take one Minor from each of the groups *(a)* and *(b)* enumerated below.

The selection of Minors, of courses, and of subjects for the thesis must in every case be approved by the department.

Courses of Instruction.

The annexed schedule is intended to indicate the general character and the extent of the work required, but equivalent courses may be substituted for those contained in the list. Those courses which are available for the session 1918-19 are marked by an asterisk:

*1—Old English: Grammar and reading of Selections. Fifty hours. Professors Horning and Keys.

*2—Middle English and Historical Grammar. Fifty hours. Professors Horning and Keys.

*3—Milton and Seventeenth Century Literature. Fifty hours. Professors Edgar and Wallace.

*4—The Development of the Drama. Fifty hours. Professors Edgar, Simpson, and Wallace.

*5—Nineteenth Century Thought: Newman, Carlyle, Mill, Arnold and Ruskin. Fifty hours. Professors Alexander, Edgar and Simpson.

*6—Beowulf. Fifty hours. Professor Keys.
*7—Chaucer and his School. Fifty hours. Dr. Clawson.
8—The Arthurian Romances. Professor Horning.
*9—Shakespeare's Comedies. Professor Alexander.
*10—The English Novel in the Eighteenth and Nineteenth Centuries. Fifty hours. Professor Keys.
11—Nineteenth Century Thought (Second Course). Professor Wallace.
12 and 13—The study of two authors approved by the Department other than those mentioned in this list.
14 and 15—The study of two selected periods of literature other than those mentioned in this list.
16—Recent English Literature: George Meredith, Thomas Hardy, Joseph Conrad, H. G. Wells, Bernard Shaw, and the chief writers of poetry since 1901.

The following Minors are recommended for students taking their Major in this department:

Group (*a*)—Any one of the following courses:
*1—Gothic as an Introduction to the Study of Philology. Fifty hours. Professors Horning and Keys.
2—The History of Literary Criticism.
3—English Political Thought. Fifty hours. Professor Kennedy.
*4—The Connection of English and French Literature in the Eighteenth Century. Professor Edgar.
5—The Connection of English and German Literatures in the Eighteenth Century. Professor Horning.

Group (*b*)—Any of the Minors offered in Classics, French, German, Italian, Spanish, History, and Philosophy.

Minors in English for candidates who are not taking their Major in English will be arranged on application.

GERMAN.

The selection of courses and of theses for the degrees of Master of Arts and Doctor of Philosophy must in every case be approved by the department.

Degree of Master of Arts.

Students admitted as candidates for the degree of Master of Arts in German must cover satisfactorily the work of at least three of the major courses outlined below and must submit a thesis on some subject connected with the work.

Degree of Doctor of Philosophy.

Students admitted as candidates for the degree of Doctor of Philosophy in German must cover satisfactorily the work of at least ten major courses

and must submit a thesis which, in the opinion of the department, is worthy of publication. They shall further be required to select two Minors in two approved departments other than German.

Candidates taking their Major in departments other than German may select as a Minor in German any three courses of fifty hours each.

Courses of Instruction.

Major courses (fifty hours each).

1—Gothic and Introduction to the Study of Germanic Languages. Professor Horning.

2—The Middle High German popular Epic: The Nibelungenlied. Professor Needler.

3—History of the German Drama from the Beginning to Lessing. Professor Needler.

4—Middle High German Lyrical Poetry. Professor Horning.

5—Lessing. Professor Young.

6—Goethe's autobiographical Prose Writings (only one of 5 and 6 will be offered in 1919-20). Professor Young.

7—Goethe's Faust. Professor Lang.

8—Schiller's Philosophical Writings (not offered in 1919-20), Professor Fairley.

9—The German Drama in the Nineteenth Century. Professor Lang.

10—Schopenhauer in relation to German literature. Professor Fairley.

Minor courses (fifty hours each).

11—A general acquaintance with the German Literature of the Nineteenth Century, with the reading of approved texts. Professors Lang and Young. (Not offered by Professor Young in 1919-20).

12—Middle High German Grammar and Literature. Professor Horning and Professor Needler.

13—The Austrian Drama in the Nineteenth Century. Professors Lang and Young. (Not offered by Professor Young in 1919-20).

ROMANCE LANGUAGES.

Degree of Master of Arts.

The general conditions of candidacy for the Master's degree will be found on page 7. Proposed courses of study and the subject of the thesis must receive the approval of the staff in French, or in Italian, or in Spanish, in one of which the candidate must do the major part of his work.

Degree of Doctor of Philosophy.

A candidate for the degree of Doctor of Philosophy shall select his major and minor subjects under the direction of the staff in Romance Languages

in accordance with the general regulations. The major subject shall be chosen from one of the following groups:

Romance Philology. Italian Language and Literature.
French Language and Literature. Spanish Language and Literature.

Both Minors may be selected within the department of Romance Languages. One Minor *must* be selected within the department. If the second minor is selected outside of this department it must be chosen from a department cognate with that of the major subject.

The department will not recommend the conferring of this degree merely because of the completion of a certain programme of studies. Evidence must be exhibited of special aptitude and of high attainment in the field chosen by the candidate. The thesis must be a distinct contribution to the literature of the subject discussed.

A student whose major subject is not in Romance Languages, but who requires a Minor in one of its groups, will be expected to make his choice of such Minor only after consultation with the staff in Romance Languages.

Courses of Instruction.

The following courses are offered for students proceeding to the degree of Master of Arts or Doctor of Philosophy. Courses 1, 2, 7, 8, and 9 are intended for candidates beginning graduate work.

1—Methods of Research, Bibliography. One hour a week.
Professor Buchanan.

2—Introduction to Romance Philology. The first part of this course will deal with the phonology and morphology of Vulgar Latin. During the second part of the course special attention will be paid to the comparative morphology of the Romance languages. Two hours a week. (To be given in 1920-1921.) Professor Ford.

3—Old French. An advanced course in phonology and morphology. Nyrop, Grammaire historique de la langue française. Two hours a week.
Professor Ford or Professor Will.

4—Old Provençal. Phonology and morphology of Old Provençal. Appel, Altprovenzalische Chrestomathie. Prerequisite: course 2. Two hours a week. Professor Ford.

5—Old French Epic. Two hours a week. (To be given in 1920-1921).
Professor de Beaumont.

6.—The French Renaissance to 1550. Professor Will.

7—The French Drama of the Seventeenth Century.
Professor Cameron.

8—History of French Criticism from du Bellay to Brunetière.
Professor de Beaumont.

9—The History of Prose Fiction in France, with special reference to the Eighteenth and Nineteenth Centuries. Two hours a week.
Professor Kittredge.

10—The Development of French Thought and Ideals from the Renaissance to Modern Times. Professor Will.

11—The Literary Relations between France and England in the Nineteenth Century. Marcel Moraud.

12—Types of Prose Fiction in the Romance Countries and in England.
i. The *picaresque* and the novel of manners. (1919-1920).
ii. The historical novel and its antecedents.
Professor Kittredge.

13—Italian Lyric Verse in the Thirteenth Century. Professor Shaw.

14—Critical study of the following texts: (*a*) Dante, La Divina Commedia (ed. Grandgent): Inferno, Purgatorio (cantos 1-15); Castiglione, Il Cortegiano (ed. Cian); Leopardi, Le Poesie complete (ed. Foresi), *or* (*b*) Poema del Cid (ed. Menéndez Pidal); Cervantes, Don Quijote, Part I. (ed. Rodríguez Marín); Espronceda, Obras poéticas y escritos en prosa.

15—Cervantes. Seminar. Professor Buchanan.

16—Critical study of the following texts: (*a*) Dante, La Divina Commedia (ed. Grandgent): Purgatorio (cantos 16-33), Paradiso; Petrarca, Canzoniere (ed. Carducci e Ferrari); Carducci, Odi barbare, *or* (*b*) Arcipreste de Hita, Libro de buen amor (ed. Cejador); Cervantes, Don Quijote (ed. Rodríguez Marín), Part II; Guevara, El Diablo cojuelo (ed. Bonilla).

HISTORY.

Degree of Master of Arts.

Candidates for this degree are accepted under the general regulations, but, before being admitted, must give evidence of having adequate training for advanced study in History.

Degree of Doctor of Philosophy.

Graduate work leading to this degree is offered in the subjects named below.

Instruction will be given in tutorial groups and candidates must present a thesis of such a character as to constitute an addition to the literature of the subject selected.

Courses of Instruction.

Major Subjects:

1—The History of Canada with special reference to constitutional development.

2—England under the Tudors and Stuarts.

Minor Subjects:

1—The Discovery of America and the History of Canada to 1763. Twenty-five hours.

2—The American Revolution and Canada since 1763. Twenty-five hours.

3—An outline of Mediaeval History. Twenty-five hours.

4—The Constitutional History of England in outline. Twenty-five hours.

5—The Constitutional History of Canada. Twenty-five hours.

6—Europe from 1789 to 1815. Fifty hours.

7—Europe since 1815. Fifty hours.

8—Aristotle: Politics; Hobbes: Leviathan. Twenty-five hours.

There is no restriction upon the choice of minor subjects which will be arranged by the Faculty with reference to the needs of the individual student.

POLITICAL SCIENCE.

Degree of Master of Arts.

Candidates for the degree of Master of Arts in the department of Political Science must present evidence of fitness for advanced study in the department, either by having taken special undergraduate courses in Political Science, Commerce and Finance, History, or Philosophy; or by giving such other proof of sufficient knowledge as will justify their acceptance as advanced students. Each candidate is required to submit, for the approval of the staff in Political Science, on or before the date prescribed in the general regulations in this connection, the title of the thesis proposed. The thesis must be submitted in complete form on or before the 30th April. An oral examination upon the subject of the thesis will be conducted by the staff of the department before the candidate is recommended to the Board of Graduate Studies for the degree.

Degree of Doctor of Philosophy.

Candidates may proceed to the Degree of Doctor of Philosophy in the manner prescribed in the general regulations. They may select their major course from the following list:

Economic History.

Economic Theory.

Public Finance.

Philosophy of Politics.

Constitutional History and Law.

Special subjects cognate to any or all of the above general courses are to be regarded as included under them.

Special postgraduate courses, varying in topics according to the needs of the students, are customarily given by the staff in the department. Importance is attached to individual assistance in the investigation of specific problems. The thesis offered by the candidate must present either the results of an original investigation into some problem and thus form a contribution to knowledge or a critical examination of the results of investigation by others and thus form a contribution to scholarship. One Minor subject must be selected from the lists given above and the other from the subjects offered by the departments of History and Philosophy. In exceptional circumstances candidates may submit for the approval of the department some other subject of study as a second Minor, even though not obviously related to the Major.

An oral examination will be conducted by the staff of the department in the major and in the first minor subject before the candidate is recommended to the Board of Graduate Studies for the degree.

PHILOSOPHY.

Degree of Master of Arts.

Candidates for this degree will proceed under the general regulations, to be found on pages 8-9. Except in special cases, candidates will be expected to qualify by pursuing an approved course of study, and passing a satisfactory examination therein.

In order to qualify in that way for the degree, candidates must complete the work in four subjects, selected from the list given below under "Courses of Instruction". The subjects chosen must extend to at least three divisions of the department. Subject to the approval of the department, a thesis may be substituted for one of the courses.

Graduate students in this department fall into two classes, viz., those who have, and those who have not taken the special work in Philosophy for their B.A. degree.

Those who have taken the special work referred to, must select their subjects of study from Courses 10-25.

Those students who have not taken that special work, will be required, before being admitted to graduate courses, to take such undergraduate courses, or to furnish such other proof of sufficient knowledge as will justify their admission to graduate courses. They will select their subjects of study in consultation with the staff in Philosophy. The work may be expected to require two years in most cases.

Candidates who furnish evidence satisfactory to the staff of the department of their qualifications for original investigation may with the consent of the department qualify, by writing an approved thesis, and taking special work in consultation with the staff in Philosophy (16, I. (*b*)).

The writer of a thesis will be required to report regularly to the head of the department, and also to the head of the division in which his thesis falls.

Degree of Doctor of Philosophy.

Candidates for this degree must present a thesis embodying the results of independent investigation, of such a character as to make a distinct contribution to the literature of the subject and to show capacity for original research on the part of the writer. The writer of a thesis must report regularly to the head of the department, and also to the head of the division in which his thesis falls.

Students are recommended to complete the work for the degree of Master of Arts as part of the work for this degree.

A candidate who has completed the work for the degree of Master of Arts must take in addition, one course of lectures in the division in which his first Minor falls, and for the second Minor, must fulfil the requirements of the department in which such Minor is taken. Both Minors must be selected after consultation with the staff in Philosophy.

Divisions of the department: History of Philosophy, Logic and Epistemology, Psychology, Ethics.

Courses of Instruction.

The following courses are offered to graduate students. In each of these courses fifty hours will be required, including lectures and seminar work, and examinations will be held at the close of the course.

GENERAL.

1—History of Philosophy. Kant and modern systems. Professor Hume.

2—History of Modern (chiefly British) Philosophy. Professor Hume.

3—History of Ancient Philosophy. Professor Brett.

4—Logic, Deductive and Inductive. Theory of the Judgment. Professor Brett.

5—(*a*) Introduction to Psychology, to lead up to the (*b*) methods and tasks of Social Psychology. Professor Smith.

6—(*a*) Psychology of sight and hearing in their relation to Higher Mental Processes, or (*b*) History of Psychophysics. Professor Smith.

7—Ethics, Aristotle, Kant and Green. Professors Tracy and Lane.

8—Modern Ethics. Professor Robinson and Dr. Brown.

9—Social Ethics. Professors Robinson and Lane.

HISTORY OF PHILOSOPHY.

10—Modern Philosophy, with special reference to the Hegelian Movement. Professor Hume.

11—(In alternate years with 10) Modern Philosophy, with emphasis on the Anti-Rationalist, Empiricist, and Pragmatist Writers. Professor Hume.

12—Problems of Modern Philosophy. Individuality and Value. Professor Lane.

13—Ancient Philosophy from Thales to Plato. Professor Brett.
14—Ancient Philosophy from Plato to Augustine. Professor Brett.

LOGIC AND EPISTEMOLOGY.

15—Philosophical Criticism in the 19th Century. Professor Brett.
16—The Philosophy of Lotze. Professor Tracy.
17—Recent discussions in the Theory of Knowledge and Being. Dr. Brown.

ETHICS.

18—Ethical Idealism. Professor Tracy.
19—The Philosophy of Bergson, with emphasis on its Ethical Aspects. Professor Lane.
20—The Evolution of Morals. Professor Robinson.
21—Social and Political Ethics. Professor Robinson.

PSYCHOLOGY.

22—Tests of Intelligence. Professor Smith.
23—Studies in the Psychology of Religion. Professor Smith.
24—Modern Doctrines of Space. Professor Smith.
25—Categories of Experimental Psychology. Professor Smith.

The following Minors are offered in this department for candidates whose Majors lie in other departments:

Philosophy A—Courses 1 and 2.
Philosophy B—Courses 3 and 13 or 14.
Philosophy C—Courses 4 and either 15 or 16.
Philosophy D—Courses 5 and 6.
Philosophy E—Courses 8, and either 7 or 9.

EDUCATIONAL THEORY

Degree of Master of Arts.

Candidates for this degree are accepted under the general regulations.

The M.A. thesis should as a rule embody the results of an original experimental investigation.

Degree of Doctor of Philosophy.

Courses leading to the degree of Doctor of Philosophy are offered for students qualified under the general regulations. Candidates may elect to take either of the subjects named below as a Major, but only one of the subjects mentioned under "Minor Courses". The second Minor for those candidates who select an educational subject for a Major, must be taken in a Faculty other than Education. The Minors are also open to those candidates whose Major lies in another department.

The thesis submitted must be a distinct contribution to knowledge and show capacity for original research.

Courses of Instruction.

Major Courses:

1—Educational Administration:
(*a*) In Canada,
(*b*) In other countries: England, France, Germany, Denmark, and the United States. Dean Pakenham.

2—Educational Psychology:
(*a*) Experimental,
(*b*) Lecture Courses and Seminar. Professor Sandiford.

Minor Courses (*Fifty hours each*):

3—Educational Administration. Dean Pakenham.
4—Educational Psychology. Professor Sandiford.

MATHEMATICS.

Degree of Master of Arts.

Candidates for this degree are accepted under the general regulations.

Degree of Doctor of Philosophy.

A candidate proceeding to the degree of Doctor of Philosophy in this department may select his major subject from any of the branches of Mathematics after consultation with the staff.

The thesis submitted for the degree must give evidence of original investigation and must constitute a distinct addition to the knowledge of the subject.

Courses of Instruction.

The following courses of instruction are open to graduate students:

1—Differential Calculus. Fifty hours. Professor Fields.
2—Integral Calculus. Fifty hours. Professor DeLury.
3—Differential Equations. Fifty hours. Professor Fields.
4—Theory of Functions. Fifty hours. Professor DeLury.
5—Quaternions. Fifty hours. Professor Baker.
6—Theory of Functions of a Real Variable. Fifty hours. Professor DeLury.
7—Advanced Theory of Functions of a Complex Variable. One hundred hours. Professor DeLury.
8—Theory of Algebraic Functions and Abelian Integrals (Based on Riemann, Noether, etc.) Fifty hours. Professor Fields.
9—Theory of Algebraic Functions and Abelian Integrals (Methods of the lecturer). Fifty hours. Professor Fields.
10—Theory of Elliptic Functions. Fifty hours. Professor Fields.

11—Calculus of Variations. Fifty hours. Professor Fields.
12—Determinants and Theory of Matrices. Fifty hours. Professor Fields.
13—Theory of Numbers. One hundred hours. Professor Fields.
14—Theory of Substitution. With applications to Algebraic Equations. Fifty hours. Professor Beatty.
15—Theory of Continuous Groups. Fifty hours. Professor Beatty.
16—Theory of Sets and Transfinite numbers. One hundred hours. Professor Beatty.
17—Actuarial Science: Frequency Curves and Correlation, Measurement of Groups and Series. Fifty hours. Professor Mackenzie.

Candidates taking a Major in Mathematics may select as one Minor any of the above courses except Nos. 1 and 2. The second Minor may be selected from any of the Minors offered by departments of the University other than Mathematics.

Courses Nos. 1 and 2 constitute a Minor in Mathematics (Mathematics A) for departments other than Mathematics, Physics, and Astronomy. The department is prepared to offer other Minors which must be arranged by consultation with the staff in Mathematics and the staff of the department in which the major subject lies.

PHYSICS.

Degree of Master of Arts.

Candidates for this degree are accepted under the general regulations.

Degree of Doctor of Philosophy.

Candidates for admission to the Degree of Doctor of Philosophy must have a competent knowledge of Mathematics and Chemistry.

Candidates may proceed to the Degree of Doctor of Philosophy in this Department in either of the following major divisions:—

Experimental Physics.
Mathematical Physics.

Courses of Instruction.

1—Properties of Matter. Fifty lectures.
2—Advanced Heat and Thermodynamics. Fifty lectures. Professor Satterly.
3—Geometrical Optics. Thirty-five lectures.
4—Mathematical Theory of Electricity and Magnetism. Fifty lectures. Professor Burton,
5—Theory of Optics. Fifty lectures.
6—Elasticity, Elastic Solid Theory of Light, Polarisation. Fifty lectures. Professor Burton.
7—Acoustics, Fourier's Series and its applications to Physics. Twenty-five lectures. Professor Gilchrist.

8—Hydromechanics. Twenty-five lectures.

9—The Physical Properties of Colloidal Solutions. Twenty-five lectures. Professor Burton.

10—The Electromagnetic Theory of Light and the Electron Theory of Matter. Fifty lectures. Professor McLennan.

11—Conduction of Electricity through Gases and Radioactivity. Fifty lectures. Professor Satterly.

12—Atomic Structure and the Origin and Characteristics of Spectra. Twenty-five lectures. Professor McLennan.

13—Theories of Radiation, including Photoelectricity and other illustrations of the Quantum Theory. Twenty-five lectures. Professor McLennan.

14—The Principle of Relativity with applications to Radiation and the Electron Theory. Twenty-five lectures. Professor Burton.

15—Osmotic Pressure and Related Phenomena. Professor Satterly.

16—Experimental Physics. Courses of graduate laboratory work will be arranged to illustrate courses 1-13.

17—Physics Seminar. This organization consisting of all instructors, graduate students, and advanced students in the department meets fortnightly on Thursdays from 4.15 to 6 o'clock for the discussion of recent research.

Candidates for the Degree of Doctor of Philosophy taking their major subject in either Experimental or Mathematical Physics may select but one Minor from the department of Physics. This Minor may be either one of Courses 1, 2, 4, 5, 6, 10, 11, or two of Courses 3, 7, 8, 9, 12, 13, 14, together with one of the experimental courses 15. The second minor may be selected from Mathematics, Astronomy, Chemistry A, B, C, D, E, or Mineralogy A, B, C, Geophysics, Physical Botany.

The following Minors are available in the Department:

Physics A—One of courses 1, 2, 4, 5, 6, 10, 11 with one of the experimental Courses 15.

Physics B—Two of Courses 3, 7, 8, 9, 12, 13, 14, with one of the experimental Courses 15.

ASTRONOMY.

Degree of Master of Arts.

Candidates for this degree are accepted under the general regulations.

Degree of Doctor of Philosophy.

This department is not prepared at present to accept candidates for the degree of Doctor of Philosophy.

The following Minors are available for candidates taking their Major in other departments:

Astronomy A—The Application of Physical Methods to Astronomical Problems. Fifty lectures. Professor Chant.

Astronomy B—Spherical Astronomy, including the use of the Nautical Almanac and exercises in computing. Forty lectures. Professor Chant.

BIOLOGY.

Degree of Master of Arts.

Graduate work leading to the degree of Master of Arts is offered in the various subjects enumerated below under "Courses of Instruction". Except in special cases, candidates will be expected to qualify in accordance with Section 16 (*b*) of the regulations.

Degree of Doctor of Philosophy.

Graduate work leading to the degree of Doctor of Philosophy is offered in the divisions indicated, subject to the following conditions:

1—Students electing major work must possess adequate qualifications for beginning work of a graduate character in the major subject, and must possess a competent though elementary knowledge of Physics and Chemistry. For the final examination a knowledge of the general field of Biology will be considered necessary. The thesis must include an original contribution to the knowledge of the subject.

2—Students electing major work must have their entire course of study approved by the instructor in charge of the major subject.

3—Students electing major work may not select more than one Minor out of the subjects separately listed as Minors for this Department.

4—Students electing minor work must have their selection approved by the instructor in charge of the subject.

5—The standing to be attained in a minor subject shall be understood to be in general equivalent to Honour standing in the four-hour course of a corresponding subject of the Fourth Year undergraduate course, except in special cases in which (*a*) exemption or part exemption from one Minor may be granted to students who already have competent knowledge of the subject, or (*b*) other requirements may be made depending on the previous training of the student.

Major work is offered in the following subjects:

Vertebrate Zoology.
Invertebrate Zoology.
Limnobiology.
Marine Biology.
Entomology.
Histology.
Embryology.

Courses of Instruction.

I. GENERAL BIOLOGY, ZOOLOGY, HISTOLOGY AND EMBRYOLOGY.

1—†General Biology: A course of lectures and conferences on the general problems of Biology. Professor Bensley.

2—*Vertebrate Zoology: A laboratory course of 100 hours on the system, morphology and distribution of the Vertebrates.

Professor Bensley.

3—*Invertebrate Zoology: A laboratory course of 100 hours on the system, morphology and distribution of the Invertebrates.
Professor Walker.

4—*Limnobiology: A course on the system, morphology and oecology of fresh-water organisms. Dr. Clemens.

5—‡Marine Biology: Special research on the oecology of marine organisms. Professor Huntsman.

6—‡Entomology: A course on the morphology, classification and oecology of the Insects, with special research; in conjunction with Course 3.
Professor Walker.

7—†Animal Histology. A laboratory course of 100 hours on animal histology and cytology including histological technique.
Professor Piersol.

8—*Microscopic Anatomy of Vertebrates: A laboratory course of 100 hours including histological technique. Professor Piersol.

9—*Vertebrate Embryology: A laboratory course of 100 hours on the general embryology of Vertebrates. Professor Piersol

Note—Courses indicated* are offered as Minors, or in conjunction with advanced work, literature, problems and research in a special division of the field as Majors.

Courses indicated † are offered as Minors only.

Courses indicated ‡ are available as Majors only, and must be taken in conjunction with the subjects specified.

Except for the conditions mentioned above (Sections 1-4), no restrictions are imposed with reference to the selection of major and minor subjects. Students are advised, in making a preliminary choice of subjects, to keep in view the possible requirements of their future fields of work.

BOTANY.

Degree of Master of Arts.

Graduate work leading to the degree of Master of Arts is offered in the various subjects enumerated below under "Courses of Instruction". Except in special cases, candidates will be expected to qualify in accordance with Section 15 (*d*) of the regulations.

Degree of Doctor of Philosophy.

Graduate work leading to the degree of Doctor of Philosophy is offered subject to the following conditions:

1—Students electing major work must possess adequate qualifications for beginning work of a graduate character in the major subject, and must possess a competent though elementary knowledge of Physics and Chemistry. For the final examination a knowledge of the general field of Biology will be considered necessary. The thesis must include an original contribution to the knowledge of the subject.

2—Students electing major work must have their entire course of study approved by the instructor in charge of the major subject.

3—Students electing major work may not select more than one Minor from the list enumerated below.

4—Students electing minor work must have their selection approved by the instructor in charge of the subject.

5—The standing to be attained in a minor subject shall be understood to be in general equivalent to Honour standing in the four-hour course of a corresponding subject of the Fourth Year undergraduate course, except in special cases in which (*a*) exemption or part exemption from one Minor may be granted to students who already have competent knowledge of the subject, or (*b*) other requirements may be made depending on the previous training of the student.

Major work is offered in the following subjects:

Morphology of Cryptogams.
Morphology of Phanerogams.
Plant Oecology.
Plant Physiology.
Plant Pathology

Courses of Instruction.

1—*Cryptogamic Botany I: A lecture and laboratory course of 100 hours on the system and morphology of the Liverworts, Mosses, Ferns and fern allies. Professor Faull.

2—*Cryptogamic Botany II: A lecture and laboratory course of 100 hours on the system and morphology of the Algae, Fungi, and Slime-moulds. Professor Faull.

3—‡Mycology: A special course on the system, morphology, and biology of the Fungi. Professor Faull.

4—*Morphology of Phanerogams: A laboratory course of 100 hours on the morphology of Angiosperms, Gymnosperms and related fossil forms. Professor Thomson.

5—‡Anatomy of Gymnosperms: A special course on the comparative anatomy of the Gymnosperms; n conjunction with Course 4. Professor Thomson.

6—*Plant Physiology: A lecture and laboratory course of 100 hours on the physiology of plants. Professor Howe.

7—*Oecology and Plant Geography: A course of 100 hours on plant associations, the adaptations of plants to environmental factors, and geographical distribution. Professor Howe.

8—†Palaeobotany: A special course on fossil plants. Professor Thomson.

9—†An experimental and seminar course on the principles of genetics. Professor Thomson.

10—*Plant Pathology Professor Faull.

Note—Courses indicated* are offered as Minors, or in conjunction with advanced work, literature, problems and research in a special division of the field as Majors.

Courses indicated ‡ are available as Majors only, and must be taken in conjunction with the subjects specified.

Courses indicated † are available as Minors only.

Except for the conditions mentioned above (Sections 1-4), no restrictions are imposed with reference to the selection of major and minor subjects. Students are advised, in making a preliminary choice of subjects, to keep in view the possible requirements of their future fields of work.

ANATOMY.

Degree of Master of Arts.

Either of the minor courses described below may be taken as leading to the degree of Master of Arts. Course 5 is also open to those who have covered the ground represented by the Minors.

Degree of Doctor of Philosophy.

The work required of candidates for the degree of Doctor of Philosophy with a Major in Anatomy will be principally the preparation of a thesis based upon an investigation of some anatomical problem, together with the reading of the literature cognate to the research.

As a preliminary requirement it will be necessary that the candidate shall have taken a course in General Biology and courses in Vertebrate Anatomy (Biology Course 2) and Embryology (Biology Course 7). The latter two may be taken as a Minor.

The following divisions lead to the degree of this department:

Anatomy.
Anatomy of the Nervous System.
Vertebrate Embryology.

Candidates taking Anatomy as a Major are recommended to select their Minors from the departments of Anatomy, Zoology, Physiology, and Pathology.

Courses of Instruction.

The following courses of instruction are offered by the department:

1—Osteology and Syndesmology. Lectures and recitations. Sixty hours. Professor McMurrich and Dr. Watt.

2—Human Anatomy. Laboratory and lectures. One hundred and seventy-five hours. Professor McMurrich and Dr. Watt.

3—Human Anatomy. Continuation of Course 2. One hundred and seventy-five hours. Professor McMurrich and Dr. Watt.

4—Anatomy of the Nervous System. Lectures and Demonstrations. Forty hours. Professor McMurrich.

5—Advanced Human Anatomy and Embryology. Laboratory and reading. Open only to those who have taken Courses 1, 2, and 3.
Professor McMurrich and Dr. Watt.

The following Minors are offered by the department:
Anatomy A—Courses 1, 2 and 3
Anatomy B—Course 4.

BIOCHEMISTRY.

Degree of Master of Arts.

Candidates for this degree are accepted under the general regulations. All candidates who have not previously taken the course of lectures and laboratory work in advanced Biochemistry (Biochemistry 2 and 4) or its equivalent, will be required to take this course.

Degree of Doctor of Philosophy.

Candidates for the degree of Doctor of Philosophy are required to submit a thesis which constitutes a distinct addition to the knowledge of the subject, and of such value as to merit publication in one of the leading scientific journals.

Candidates for the degree of Doctor of Philosophy in this department who do not intend taking Physiology as a minor are reminded that the relationship between these two Sciences is so intimate as to render a knowledge of the elements of mammalian physiology extremely advisable. Candidates are furthermore reminded that mathematics is becoming of very great importance in the investigation of the chemical phenomena of life, and they are strongly urged to acquire a knowledge of elementary differential and integral calculus and of statistical methods.

Students taking their major in Biochemistry may select their minors from any other division of graduate study offered by the University. The following subjects of study are, however, suggested as appropriate adjuncts to the study of Biochemistry:

Anatomy.
Bacteriology.
Biology.
Botany.
Chemistry.
Histology.
Household Science.
Mathematics.
Pathological Chemistry.
Pathology.

Pharmacology.
Physics.
Physiology.
Psychology.
Zymology.

Candidates for the degree of Doctor of Philosophy who desire to take a minor in Biochemistry will be required to pass an examination covering the field comprised in Courses 1, 2, 3 and 4.

Courses of Instruction.

1—General Biochemistry. Ninety Lectures.

2—Advanced Biochemistry. Sixty lectures.

3—A Laboratory Course in General Biochemistry. One hundred and twenty hours.

4—A Laboratory Course in Advanced Biochemistry.

PHYSIOLOGY.

Degree of Master of Arts.

Candidates for the degree are accepted under the general regulations. All candidates will be required to show credits for courses 1, 3 and 5 of this department or their equivalent. These courses must be completed before entering upon the work for the M.A. degree, but Courses 2 and 4 may be taken simultaneously.

Courses of Instruction.

1. A course of lectures on Physiology; two a week (throughout the year).

2. A course of lecture-demonstrations on Neurology and the Special Senses; two a week (one term).

3. A course of lectures on advanced Physiology; two a week (throughout the year).

4. A course of advanced lectures on Physiology; two a week (one term).

5. General laboratory course in Physiology; four hours a week throughout the year).

6. Advanced laboratory course.

Degree of Doctor of Philosophy.

Candidates for the degree of Doctor of Philosophy are required to submit a thesis which constitutes a distinct addition to the knowledge of the subject, and of such value as to merit publication in one of the leading scientific journals.

Candidates for the degree of Doctor of Philosophy in this department who do not intend taking Biochemistry as a minor are reminded that these two sciences are so intimate as to render a knowledge of general Biochemistry extremely advisable. They should at least take courses 1 (General Biochemistry) and 4 (a laboratory course in General Biochemistry) of the

Department of Biochemistry. A general course in experimental Pharmacology is also almost essential. Certain courses in Biology, which should include vertebrate histology and cytology (12) vertebrate (14) and structural neurology (16) are of importance. A good training in Physics such as that mapped out for the honour degree in Physiology and Biochemistry is required. Besides this, however, certain courses in Physics are recommended. Students taking their major in Physiology may select their minors from any other division of graduate study offered by the University. The following subjects are suggested as appropriate, their relative importance as adjunct to the study of Physiology being indicated in a general way by the order in which they stand:

Biochemistry (1 and 4).
Biochemistry (3 and 6).
Pharmacology.
Histology and Cytology (12 or 18 Biol.).
Neurology (16 Biol. and 4 Anat.).

or one or more of the following:

Embryology (14 Biol.).
General Biology (13 Biol.)
Mathematics.
Pathological Chemistry.
Physics 7, 19, 21, 25.
Psychology.

When Physiology is taken as a minor, courses 1, 3 and 5 are required as detailed above.

PATHOLOGICAL CHEMISTRY.

Degree of Doctor of Philosophy.

Candidates proceeding to the degree of Doctor of Philosophy in this department must cover the field of Pathological Chemistry in addition to the investigation of some selected problem.

Students taking their Major in this department are recommended to select their Minors from the following:

Chemistry, A or C.
Biochemistry and Physiology, A or B.
Pathology.

Courses of Instruction.

1—General Pathological Chemistry. Thirty lectures. Professor Hunter.
2—Special Pathological Chemistry. Fifteen lectures. Professor Hunter.
3—Elementary Laboratory Course. Sixty hours.
Professor Hunter and Assistants.
4—Advanced Laboratory Course. Sixty hours.
Professor Hunter and Assistants.

The following Minor is offered by the department:
Pathological Chemistry A—Courses 1, 3 and 4.

CHEMISTRY.

Degree of Master of Arts.

A student who is proceeding to the degree of Master of Arts in accordance with the general regulations must consult the staff as to the selection of suitable courses of study.

Degree of Doctor of Philosophy.

The thesis submitted for the degree of Doctor of Philosophy in this department must constitute a distinct contribution to the knowledge of the subject.

The following major divisions leading to the degree are offered:

Organic Chemistry.
Physical Chemistry.

Candidates taking a Major in either of these divisions may not select as Minors Chemistry A, C, or E. The following Minors are recommended:

Major subject—Organic Chemistry.

Minors—Chemistry D.
and
Bio-chemistry A, Pathological Chemistry A, or Biology 13.

Major subject—Physical Chemistry.

Minors—Chemistry B and Mathematics A.

Courses of Instruction.

The following courses of instruction are open to graduate students. The selection of any of these courses presupposes an adequate knowledge of elementary Chemistry.

1—Systematic Organic Chemistry. Fifty lectures. (Open only to students who have already attended a preliminary course). Professor Allan.

2—Practical Organic Chemistry. Seventy-five hours.

3—Advanced Organic Chemistry: Heterocyclic Compounds, Synthetic Methods, Stereochemistry. Fifty lectures. Professor Allan.

4—Physical Chemistry. Fifty lectures. (Open only to students who have already taken a preliminary course and have had instruction in the calculus.) Professor Kenrick.

5—Practical Physical Chemistry. Seventy-five hours.

6—Advanced Physical Chemistry: The Phase Rule and Chemical Thermodynamics. Seventy-five lectures. Professor Miller.

7—Inorganic Chemistry: A course of reading on topics selected with reference to the major subject. The candidate must give evidence of proficiency in chemical analysis.

8—Chemical Theory. Sixty hours.

9—Mathematical Chemistry. Sixty hours.

The following Minors are offered by this department:

Chemistry A—Courses 1 and 2.
" B—Course 3.
" C—Courses 4 and 5.
" D—Course 6.
" E—Course 7.

GEOLOGY AND PALAEONTOLOGY.

Degree of Master of Arts.

Candidates for the degree of Master of Arts are accepted in this department under the general regulations.

Degree of Doctor of Philosophy.

Candidates for the degree of Doctor of Philosophy are required to submit a thesis which constitutes a distinct addition to the knowledge of the subject. In addition to the necessary preparation in Geology, a candidate must possess an adequate knowledge of the cognate sciences—Biology, Chemistry, Physics, and Mineralogy.

The following divisions constitute Majors in this department:

Geology.
Stratigraphical Geology and Palaeontology.
Economic Geology.

Courses of Instruction.

The courses of instruction open to graduate students are given below. None of these courses, as part of either a Major or a Minor, may be taken by a candidate without a preparatory knowledge of the subject:

1—Dynamical and Structural Geology. Fifty lectures. Professor Coleman.

2—Invertebrate Palaeontology. Fifty lectures on Morphology and Classification. Professor Parks.

3—Practical Invertebrate Palaeontology. Seventy-five hours. Professor Parks.

4—Archaean Geology. Twenty-five lectures. Professor Coleman.

5—Glacial Geology and Physiography. Twenty-five hours. Professor Coleman.

6—Economic Geology. Fifty lectures. Professors Coleman and Parks.

7—Stratigraphical Geology. Seventy-five hours lectures and laboratory. Professor Parks.

8—Mining Geology. Twenty-five lectures. Professor Coleman.

9—Practical Economic Geology. Fifty hours. Mr. MacLean.

10—Metamorphism. Twenty-five lectures. Professor Coleman.

11—Geological Climatology. Twenty-five lectures. Professor Coleman.

12—Stratigraphy and Palaeontology of Canada. Fifty lectures. Professor Parks.

13—Geological Seminar. One hour per week.

14—Field work. (*a*) Pleistocene Geology, two weeks; (*b*) Archaean Geology, two weeks; (*c*) Palaeozoic Geology, two weeks.

Candidates pursuing a Major in any of the divisions of the department may select one but not two Minors from the departments of Geology and Mineralogy combined. The following Minors are recommended for candidates taking a Major in this department:

MAJOR.	MINORS RECOMMENDED.
Geology.	Mineralogy A, B, or C, *and* Chemistry E or Biology 3.
Stratigraphical Geology and Palaeontology.	Geology A or C, or Mineralogy A *and* Chemistry E, or Biology 1, 3, or 11.
Economic Geology.	Geology A or B or Mineralogy A or C. *and* Chemistry C, or Physics A or B.

The following Minors are offered by the department:

Geology A—Courses 1, 4, and 5.

Geology B—Courses 2, 3, and 7.

Geology C—Courses 6, 8, and 9.

MINERALOGY.

Degree of Master of Arts.

Candidates for this degree are accepted under the general regulations.

Degree of Doctor of Philosophy.

In addition to the necessary preparation in Mineralogy proper, a candidate for admission to Mineralogy as a Major must possess an adequate knowledge of the cognate sciences—Chemistry, Physics, and Geology.

The thesis submitted for the degree must indicate that the candidate has made a distinct contribution to the knowledge of his subject.

Courses of Instruction.

1—Systematic Mineralogy. A course of twenty-five hours lectures and twenty-five hours laboratory. Professor Parsons.

2—Morphological Crystallography. A course of twenty-five lectures. Professor Walker.

3—Blowpipe Analysis and Determinative Mineralogy. Seventy-five hours laboratory. Mr. Thomson.

4—Determinative Mineralogy. Fifty hours laboratory in continuation of No. 3. Mr. Thomson.

5—Practical Crystallography. Seventy-five hours crystal measurement, drawing, projection, etc. Professor Parsons.

6—Physical Mineralogy. A course of twenty-five lectures and twenty-five hours laboratory. Professor Walker and Assistants.

7—Petrography. Twenty-five hours lectures and laboratory. Professor Walker.

8—Advanced Petrography. Twenty-five lectures. Professor Walker.

9—Petrography. Fifty hours laboratory. Professor Walker.

10—History of Mineralogy. Twenty-five lectures. Professor Walker.

11—Optical Mineralogy. One hundred hours. Professor Walker.

The Minors offered by this department are not available for candidates taking Mineralogy as a Major. For such candidates the following Minors are recommended:

Geology A, or Geology B, or Geology C.
and
Chemistry C, or Chemistry E.

The following groups of courses constitute Minors in this department:

Mineralogy A—Courses 1, 2, 3, 4 and 6.
Mineralogy B—Courses 1, 2, 5, 6 and 9.
Mineralogy C—Courses 1, 2, 6, 7, 8 and 9.

It is assumed that the candidate possesses a general acquaintance with the subject before entering on his studies as outlined above.

HOUSEHOLD SCIENCE.

Degree of Master of Arts.

Candidates for this degree are accepted under the general regulations.

REGISTER OF STUDENTS, 1918-1919.

Candidates for Ph.D.

Anderson, F. H.....Morell, P.E.I.
Baker, Miss L. V.....Whitby
Box, H. K.....Toronto
Burt-Gerrans, J. T.....Toronto
Connor, A. J.....Toronto
Cowan, D. R. G.....Thornton
Craigie, E. H.....Toronto
Currie, Miss M. E.....Beaverton
Day, W. G.....Toronto
Dearle, R. C.....Toronto
Duff, G. H.....Hamilton
Ford, Miss N. H. C.....Toronto
Foster, Miss A. W.....Scotland
Fulmer, E. I.....Toronto
Gibson, J. C.....Toronto
Gordon, R. K.....Edmonton
Jeanneret, F. C. A.....Toronto
McCallum, A. W.....Ottawa
McFarlane, Miss J.....Toronto
McKellar, H. S.....Toronto
McLean, S.....Toronto
Macallum, A. B.....Toronto
Macklin, C. C.,
Pittsburg, Pa., U.S.A.
Mueller, P. W.....Toronto
Skirrow, W. A.....Toronto
Waddington, Miss M. M...Toronto
White, J. H.....Toronto
Wright, Miss J. G....Niagara-on-the-Lake

Candidates for M.A.

Adams, S. M.....London
Bole, J. S.....Woodville
Braendle, H. A.....Waterloo
Charles, F.....Toronto
Clark, N. A.....Edmonton, Alta.
Conners, I. L.....Caledonia
Cook, S. J.....Collingwood
Cook, W. A.....Rockwood
Evans, J. J.....Toronto
Fetzer, W. R..Cuthbertson, Neb., U.S.A.
Findlay, Miss E. C.....Toronto
Floyd, L. H.....Toronto
Fraser, Miss C. J.....Toronto
Gale, Miss O. M.....Oshawa
Garnham, W. H.....Toronto
Greenaway, Miss E. M....Toronto
Greenaway, R.....Toronto
Hardy, W. G.....Oakwood
Hurst, M. E.....Vancouver, B.C.
Jamieson, A. F.....Toronto
Kemp, H. R.....Woodstock
Ketcheson, Miss F. B.....Toronto
Lang, R. S.....Orono
Lewis, Miss A. M.....Toronto
Lewis, V. G.....Birmingham, Eng.
McCarthy, Miss L. P.....Toronto
McFarlane, Miss R...Herschel, Sask.
McGeachy, J. B..Saskatoon, Sask.
McLellan, J. C.....Toronto
MacMillan, Miss D. R....Toronto
McWhorter, T. A.....Toronto
Macdonald, W. M.....Port Dover
Macpherson, Miss E.....Toronto
Manzer, R. H.....Nanaimo, B.C.
Marshall, A. L.....Vancouver, B.C.
Mathieson, Miss E.....Toronto
Millar, Miss H. C.....Brockvillo
Montgomery, J. E.....Toronto
Morgan, J. W.....Toronte
Muldrew, Miss A. I...Edmonton, Alta.
Neff, Miss R. K.....Toronto
Newell, F. W.....Toronto
Nieuwejaar, O....Bergen, Norway
Noonan, Miss A...Mount Forest
Park, Miss E. W.....Toronto
Pratt, E. R. I.....Stittsville
Ross, W. W. E.....Georgetown
Sampson, R. A.....Toronto
Smith, Miss G. H.....Toronto
Smith, M. E.....Fredericton, N.B.
Squair, Miss M.....Toronto
Thompson, J. C.....Stayner
Ward, F. W.....Toronto
Wessels, Miss M. L.....Toronto

Graduate Students

Alexander, Miss E. L.....Toronto
Bishop, Miss E. L.....Kimberley
Branch, Mrs. G. E. K.,
Berkeley, Cal., U.S.A.
Bruce, T. L.....Toronto
Fernow, K. H.....Toronto
Foster, Miss A. W.....Scotland
Fowler, Miss D. R.....Toronto
Goldring, C. C.....Toronto
Harvey, Miss W. G.....Toronto
Lawrence, W. A.....Toronto
Lobb, Miss A. M.....Toronto
Quinlan, Miss F. M.....Barrie
Sharp, Miss D.....Beamsville
Wookey, Miss G. E.....Toronto

Candidate for M.D.

Hodge, W. R. .....Toronto

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University of Toronto

BULLETIN OF INFORMATION

REGARDING FACILITIES FOR

GRADUATE STUDIES

UNIVERSITY OF TORONTO PRESS
JUNE 1918

University of Toronto

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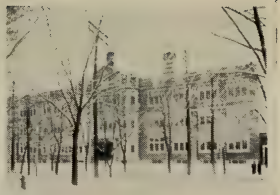
VICTORIA COLLEGE

TRINITY COLLEGE



LIBRARY

MAIN BUILDING

CHEMICAL BUILDING

BIOLOGICAL BUILDING.

MINING BUILDING

ENGINEERING BUILDING

University of Toronto.

THE Board of Graduate Studies issues annually an announcement of the graduate courses offered by the University of Toronto and the regulations for advanced degrees in the Faculties of Arts and of Medicine. In the Calendar of the Faculty of Applied Science the requirements for graduate degrees in that Faculty are set forth. The present bulletin, which is intended to supplement these announcements, affords prospective students further information with regard to what the University of Toronto has to offer in the way of laboratory and library facilities, and the standards and aims in accordance with which the various departments direct their graduate work. It will be observed that reference is often made to undergraduate studies also, the reason being that the honour system, which is greatly developed in the Faculty of Arts of this University, leads up to and may even in some cases be a first stage in the course towards a graduate degree.

PART I.

The University of Toronto as an educational institution comprises the following faculties: Arts, Medicine, Applied Science and Engineering, Education, Forestry, Household Science and Music. The present bulletin deals only with the Faculties of Arts, Applied Science and Engineering, and Education. With regard to the Faculty of Arts it is to be remembered that this faculty includes departments devoted to science; consequently some confusion is likely to result unless the meaning of the terms to be used is fixed at the beginning. Within the Faculty of Arts there is an obvious distinction between a group of subjects such as the languages and a group such as the physical sciences. But in practice this distinction is not easily marked; for, if the word "Arts" is employed for the first group, its use runs counter to the phrase "Faculty of Arts": if the latter group is distinguished as "scientific", the

student of languages objects that phonetics must be called scientific, while the historian or philosopher is equally prepared to claim that his method is scientific. If a further evasion of the difficulty is attempted by grouping the subjects as literary and scientific, the objections recur in a new form: for philosophy does not claim to be literary, history objects to being regarded as in the same class with the work of the imagination, and some branches of science may rank as literature.

These and many similar troubles are due to the complexity of modern education. While it is possible to fix arbitrary limits for purposes of administration, it is neither possible nor desirable that similar limits should be established so as to make one branch of knowledge appear unique in form or quality. We may therefore abandon the attempt to employ strict rubrics and direct attention to the purpose in view. This bulletin is to deal with the resources which the University of Toronto can offer to graduate students, and those resources fall naturally and immediately into two classes, the literary and the mechanical. The distinguishing mark of a study is its methods, and while some branches of study require only the printed material supplemented by proper instruction (as *e.g.*, the oral method in languages), others call for the type of appliances which are to be found in the equipment of a laboratory. Since one class of studies seems to be dependent on libraries as the other depends on laboratories, there is some temptation to regard these places as sure signs of the ultimate division of subjects; it is obviously incorrect to proceed in that line. But in practice it is not unfair to regard literature and language as studies which imply no laboratory equipment, and this is the point now required. For in any description of facilities, the visible apparatus of the laboratory can be easily dealt with; while for the student of literature in any form, and no less for the student of law, political science, or philosophy, there is no asset that can rank higher than the spirit of detached and concentrated interest which makes the true atmosphere of learning. In the buildings devoted to laboratory work this atmosphere is created by the visible and tangible instruments which bear witness to past achievements and future possibilities : in the rooms where the students meet to hear once more the language of Plato, Virgil, Dante or Goethe there is no less need of apparatus to develop thought and guide criticism but its form is different and it is less manifest. To

a large extent the library is the sum and substance of the resources in the way of material which a university offers to students. As a separate section will be occupied with library facilities, and the subjects for which laboratory equipment is primarily important are described in Part II, the work done by the University Staff in the other departments of the Faculty of Arts can be conveniently grouped together as the first part of the statement.

* * * *

The University of Toronto has grown and developed in close contact with the spirit of the Canadian people and the needs of the country. The dominating influence has been that of Great Britain, a fact which accounts for many distinctive marks in the general organisation and explains the character of the traditions which have been operative in the past. In its relation to the schools, the University undertakes the task of continuing some subjects which are begun in the schools and of providing instruction in other subjects proper to a more mature stage of development. In either case the attainments of the average student at the time of leaving school, necessarily affect the character of the work which can be attempted within the limits of an undergraduate course. For reasons which need not be detailed here, the undergraduate work in the University of Toronto has tended to be on a comparatively high level: so that the degree obtainable at the end of that course compares favourably with the corresponding degree as given by many institutions. This was a natural consequence of the general attitude adopted at the time, for the influence of the older British institutions made acceptable the idea that, apart from the most advanced specialisation, a student should acquire during the course for the baccalaureate degree an education which was adequate for all ordinary purposes. This valuable conception of the education which makes intelligent citizens, as distinct from the education which is vocational, neither is nor ought to be abandoned: but it has necessarily undergone some modifications.

The institution of special courses, as distinct from the General Course, made possible a higher standard of work whenever the student was able to attain the required standard. These special or honour courses for a long time supplied all the requirements of a good education for the majority of the students; they still do so, though with progress of time and natural growth there has been a continual increase in the number of those who wish to continue

their course beyond the limits of undergraduate work. In the interests of learning and of public service, the University has followed the road which leads to wider expansion and, in continuation of the system by which students have at all times been able to proceed to the degrees of Master of Arts and Doctor of Philosophy, has more definitely organised its resources for these higher degrees. The scope and character of the work which can be undertaken is described in the separate publication called "Announcement of Graduate Courses". The purpose of this Bulletin is to give a general account of the several departments in which graduate work may be done, to indicate any particular facilities available, and to make known those advantages with which special circumstances, the action of benefactors, or sustained traditions have enriched this University for the benefit of its students.

CLASSICS.

The term Classics includes the Departments of Greek, Latin, Ancient History, and Comparative Philology and Sanskrit.

The Department of Classics naturally exhibits more clearly than any other the continuity of a tradition originally British in origin. Courses modelled on such a basis have established a standard of classical scholarship not usually required on this continent for the degree of Bachelor of Arts. The nature of the undergraduate course has also tended to encourage a vital or modern reading of the classics, emphasizing the qualities implied in the term "Humanities" rather than the possibilities of minute and limited information.

While the University receives no students who have read so widely as some of those sent up by the great public schools of England, it must nevertheless be pointed out that the double standard of Matriculation, Junior and Honour, results in bringing a limited number of matriculants of superior grade who have spent at least an additional year in high school and are consequently able in the last two years of the undergraduate course to profit by instruction that might in other institutions be regarded as graduate work. It must also be noted that the classical course admits of practically no options and constitutes a unified programme of study covering all that is best in the fields of literature, ethical and political philo-

sophy, history, and linguistics. The writing of Greek and Latin prose composition is specially emphasized and is required of all students for the four years.

The traditions of reading and teaching which have become established on these lines afford a sound basis for continuation along special lines of research such as normally form the content of a doctoral dissertation. Under these circumstances it is very naturally the aim of the staff, in undertaking the supervision of work leading to the degrees of Master of Arts and Doctor of Philosophy, to hold fast to this valuable tradition and at the same time to reach out for the solid merit that lies in the more recent developments of investigations in this field. The undergraduate, of course, while receiving training in matters of judgment and literary discrimination, must take much of his information on faith. Graduate study, on the other hand, is professional in its aim, and the candidate is expected to gain some acquaintance both with matter and method in such technical fields as classical archaeology, epigraphy, palaeography, and Greek and Roman religion, where training is afforded that is markedly scientific in its method. Studies like Vulgar Latin, offered in the Romance Departments, Greek and Italic Dialects, and Comparative Philology afford a training in linguistics that is genuinely scientific. In these branches and also in Literary History and Criticism and in Ancient History proper, there is an abundance of material either for original research or for original treatment. The chief stress, however, will still be placed upon the study of ethical and political philosophy and of literature and linguistics rather than upon the newer and subsidiary studies such as archaeology and others above named.

In the organisation of studies at the University of Toronto there is a division between subjects for which each College provides a staff and subjects taught by the University Staff as distinct from the Colleges. Classics, being a College subject, has the advantage which this affords: the distribution of students in the Colleges and the relatively larger staff make possible what is practically a system of teaching by small groups and consequently greater attention to individual needs, with the advantages that inevitably accrue from closer relations between teacher and pupil. For the assistance of students of exceptional ability there are scholarships and prizes assigned to the different years: fellowships are also available for graduate work in residence and abroad.

ANCIENT HISTORY.

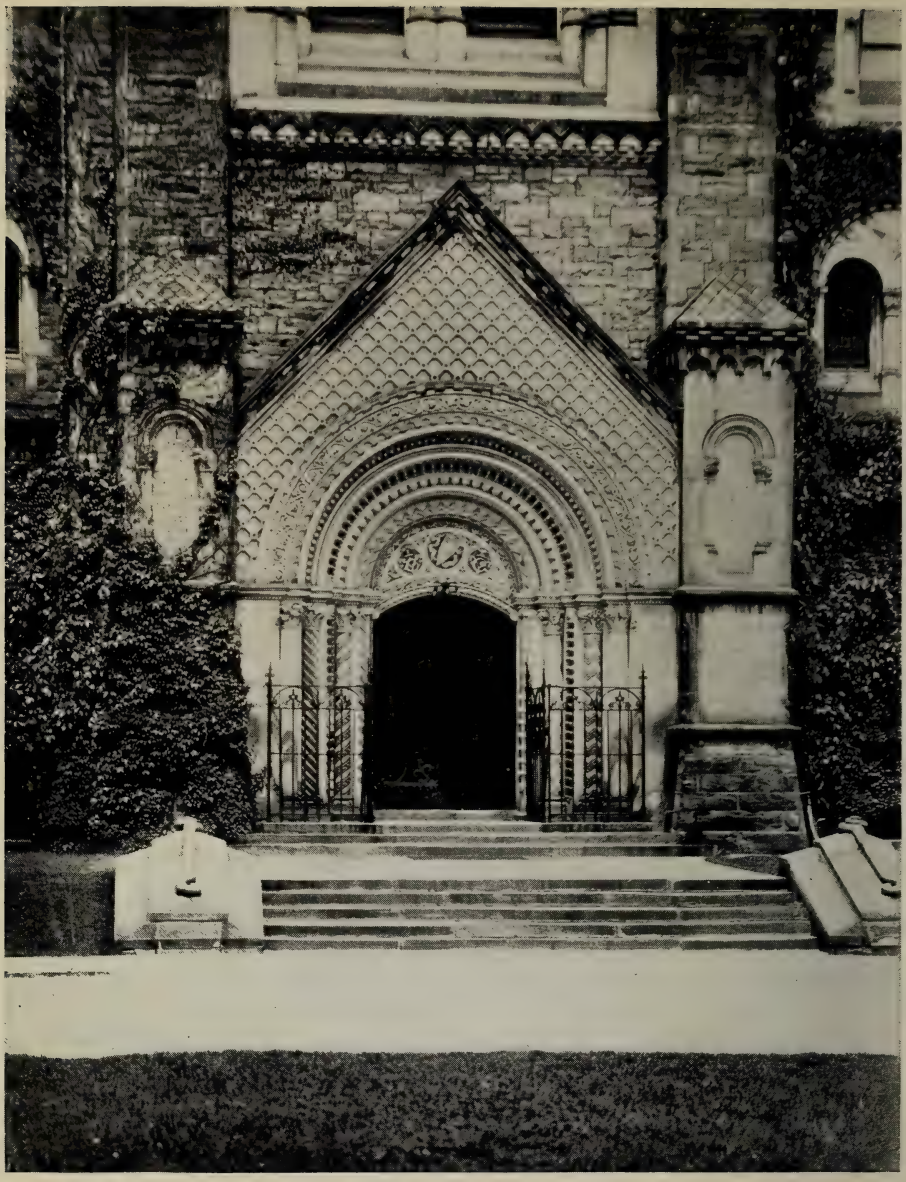
The subjects of Greek and Roman History are taught in close connection with the Classics, though they form an integral part of some courses which are not based on the original languages. Since the possibility of advanced studies in these subjects depends essentially on a knowledge of original sources, the higher aims of the department coincide with those of the department of Classics and what has been said in that connection may be taken to apply here. This department is also separately represented in the Colleges. The material available in the Library is adequate for the chief requirements and can be supplemented by the system of exchange which enables the Librarian to obtain special works from other centres.

COMPARATIVE PHILOLOGY.

Comparative Philology and Sanskrit constitute a subject in which teaching is provided by the University for students of the third and fourth years. The professor also gives instruction to students who specialise in this study after graduation.

To understand and preserve the masterpieces of literature it is necessary to understand the principles of grammar and especially of syntax. Accordingly special stress is laid on the comparative study of syntax as most important for literature and hitherto most neglected. The comparison of languages begins from phonetics which forms part of the course in philology given in the third undergraduate year. Sanskrit is used at this stage to bridge the gulf found at times between the Greek and Latin forms of the same original sound. Similarly in the study of Greek and Latin inflexions, dialects give help that cannot be obtained from any other source. For example, Oscan and Umbrian are required in the study of Latin forms: for Greek syntax a course of the dialect inscriptions is of like importance and may be given when required. For the student of letters a course on the nature of Latin prose is considered fundamental, and work is undertaken in this course by the study of typical authors whose works afford the best opportunities for comparisons of style and language. The nature of the subject makes philology peculiarly adapted for exact and scientific research, but this requires adequate preparation both in general knowledge of the languages concerned and in methods of work.

THE MAIN BUILDING



THE MAIN ENTRANCE

SEMITIC LANGUAGES.

The Department of Oriental Languages provides instruction for undergraduate students in all four years of the normal course. A special course in Greek and Hebrew is designed to meet the requirements of students who intend to proceed to Theology and require these languages for the study of Biblical Literature. Other Oriental Languages are taught to undergraduate students who elect to take the special course in that subject.

The Department of Semitic Languages offers special advantages to those who desire to pursue graduate studies and to enter the field of special investigation and research in these languages. The library of the University contains much source-material in Hebrew and the cognate languages, the accumulation of many years of effort by the former head of the department, Professor J. F. McCurdy, and by others. The libraries of the confederated and affiliated colleges, also, contain valuable material which supplements the collection of the University Library. In addition, the Royal Ontario Museum has secured valuable collections of Assyrian and Babylonian antiquities, which enable students to examine the original records of this branch of Semitic Culture. Very valuable material has been assembled to further Egyptological studies.

The teaching staffs of University, Victoria and Trinity Colleges co-operate so that in the graduate departments, students may obtain instruction and direction in the most important fields of the Hebrew, Arabic, Assyrian, Babylonian, Aramaic and Syriac Languages and Literatures.

While the courses of study are arranged mainly for specialists, courses are provided for those students of other Universities or Colleges, who, having had little or no opportunity for special study in Hebrew or the cognate languages, are desirous of availing themselves of the opportunities offered by this Department in order to proceed to a degree.

MODERN LANGUAGES.

The term modern languages is used to include English, French, Italian, Spanish, and German. Of these English, French and German are taught in the Colleges: Italian and Spanish are subjects taught in the University. All these subjects may be taken through-

out the four years of an undergraduate course. They may be regarded as forming three groups: English, Romance Languages, German.

ENGLISH.

In English the undergraduate work aims at the development of interest in, and power of appreciating literature through the study of the greater masterpieces in poetry and prose, and at giving some insight into the historical development of literature through the reading of prescribed texts; in these are included, in addition to literature primarily artistic, books representative of some of the later developments of English thought. The writing of essays is imposed throughout the course. There is, further, instruction in the earlier forms of the language and in Historical Grammar. For the Master of Arts degree, definite courses are suggested offering a wide range of choice, and actual attendance at the University is required. Students may continue their work with a view to obtaining the degree of Doctor of Philosophy by extending their studies under the direction of the department and writing a thesis of sufficient merit.

ROMANCE LANGUAGES.

The undergraduate courses in Romance Languages aim to give the student a general acquaintance with the language, literature and civilization of the three great Latin nations. In French a considerable degree of proficiency is already expected when the student registers for entrance into the University. It is a distinctive feature of the University of Toronto that courses in Italian and Spanish (as well as in French) may be pursued during four years. For all three languages in each year training is provided in speaking and writing, as well as in reading and grammar: some of the courses in each language are conducted in the language itself. In all the years of French and in the last two of Italian and Spanish the study of literature and civilization accompanies that of the language; in the last two years of French lectures are given on Old French.

As a result of the unusual completeness of the undergraduate training, a student thus prepared may undertake advanced work with a preparation that is possible in few Universities. In graduate

work the student is required to look upon the three languages as intimately related. Accordingly the Staff in Romance Languages acts as a unit for graduate studies, and provides courses which concern all three languages at once: such courses, for example,are given in Historical Grammar and Vulgar Latin. With regard both to these general courses and to those on the various periods of literature, the aim of the department is to provide advanced courses only in those subjects in which the lecturer is specially prepared. The library of the University is well equipped with editions, works of reference and literary criticism, and scientific journals; which are to these studies what laboratory equipment is to the studies of natural science. The private libraries of members of the Staff contain some collections of special value, which are available for the graduate student.

In view of the peculiar relations that exist in Canada between the Anglo-Saxon and Latin races and of the international questions to which this condition gives rise, the department is seeking in every way, especially by courses of instruction and intelligent library equipment, to interpret the different civilizations sympathetically to each other: and this concerns both undergraduate and graduate studies.

GERMAN.

The undergraduate courses in German are intended to awaken interest in German literature in its broadest aspects, particularly in that of the 18th and 19th centuries. To put this interest on a firm basis it is necessary to have a sound grasp of the language, spoken and written, as well as some insight into social and political aspects of German history. Considerable attention is paid to these branches of the work, linguistic training bulking largely in the first two years of the course. In the final year preliminary work is done in the study of Middle High German.

Graduate work is provided in continuation of these courses of instruction and may be followed for both the higher degrees. Graduate courses are offered in considerable variety, covering the whole development of the language and literature of Germany and Austria. The Library is fortunate in the possession of an almost complete collection of the earlier editions of Goethe and of such other works as make it valuable to graduate students.

HISTORY.

Mediaeval and Modern History, to which this department is limited, can be regarded as one of the best established subjects in any University curriculum. It is taught throughout the undergraduate courses and can rely upon considerable previous study in the schools. The principal object of the University courses apart from the extension of general knowledge, is to inculcate sound methods and stimulate independent enquiry. For this reason the work is done, so far as possible, by means of essays on prescribed topics and discussion in groups or small classes.

For more advanced work it is natural that interest and facilities should be greatest in the sphere of Canadian history. The Toronto Public Library has probably the best existing collection of Canadiana. The Legislative Library has the beginnings of an excellent collection on the History of the United States, and the Library of the Law Society of Upper Canada is rich in material for the study of the constitutional development of Canada. The University Library has considerable collections of material, especially on the History of England and of France. Courses of instruction are given in the work required for the higher degrees and students are encouraged to select subjects in which they are interested for purposes of research.

POLITICAL SCIENCE.

The scope of the subject is very large, including economic theory, economic history, history of economic doctrines, descriptive economics, political theory, public finance, statistics, and such special studies as international trade, transportation, banking, labour and other social problems.

The preliminary training given in the undergraduate courses prepares the student for many developments of the subject in further graduate studies. The department undertakes to give instruction to advanced students in economic history, economic theory, public finance, the philosophy of politics, or constitutional history and law. The Library is adding considerably to its collection of economic documents, government reports, and descriptive and theoretical works within this subject. But in the case of Political Science there is also a large scope for direct research upon existing conditions in the country. Students who have been pro-

perly trained may find many opportunities for important work in subjects which can only be studied by direct investigation of existent social and economic conditions. Such work has already been undertaken successfully and there is great need of trained students in many of these directions. Economic and social conditions make increasing demands on the University for trained ability, and those who have the ability are peculiarly favoured in being able to regard the State as their laboratory. To some extent this department is connected with the practical occupations known as Social Service, and students who propose devoting themselves to any branch of that work are advised to take courses in the Department of Economics.

Commercial law forms a part of the courses given by the Department of Economics. Instruction is also given in general and historical Jurisprudence, in English and Colonial Constitutional Law, and in International Law. These subjects are prescribed as parts of the course in Political Science as a basis for students intending to enter the legal profession.

Commerce and Finance is a special course intended for students who desire an education specially fitting them for a business career.

The two last-named subjects (Law and Commerce) stand in a peculiar relation to the scheme of higher studies. It is obvious that in both cases the development of the work may fall outside the scope of the University. On the other hand, as graduates of the University, students are entitled to offer themselves as candidates for the higher degrees and conduct researches suitable for acceptance by the Board of Graduate Studies. These higher studies would then be controlled by the Department of Political Science.

PHILOSOPHY.

Philosophical studies appeal in a special way to older students. Maturity, experience in life, training in other lines, make a suitable foundation and preparation for philosophical reflections, criticisms, and constructions.

In many universities, undergraduates may take merely elementary and introductory courses, the greater amount of time and attention being devoted to the graduate students.

In the University of Toronto, however, owing to the plan of dividing the undergraduate courses into a General Course and several Special Courses, it is possible to provide elementary work in the General Course, and in the Special Philosophy to develop more fully graded courses of instruction in history of philosophy, logic and epistemology, ethics and psychology.

From these graded courses extending through three years, suitable selections of minors in philosophy may be made by students whose majors are in other departments.

The student in Philosophy who has covered the work in these graded courses as an undergraduate, is in a good position to enter on more advanced studies, and may continue his work for one or more years under the direction of the Staff.

Though the library equipment in philosophy is not extensive, the books have been judiciously selected so that a large number of the more important works can be consulted. Graduate students may also use Dr. Hume's collection of pamphlets.

The student who is taking his main work in philosophy will find many facilities for supplementing his training by selecting courses from other departments. For instance, a student in ethics who wished to specialise in social ethics could advantageously select from the courses in Political Science, or take practical work in connection with the department of Social Service.

In history of philosophy, logic and epistemology, graduate students will be expected to be familiar with the general development of the chief problems in Greek and modern philosophy, and to be ready to give special attention to recent developments.

PSYCHOLOGY.

The Psychological laboratory consists of about ten rooms in the west end of the Main Building and contains apparatus suitable for the investigation of some of the problems specified below.

There is, further, a graded course of study in Psychology in the second, third, and fourth years for undergraduates in Philosophy. The whole or part of this course may be taken as a minor, in courses for the higher degrees, where such minor is advisable for candidates who have not graduated in the department of Philosophy.

Opportunities and facilities are afforded to graduates for the investigation of special problems in such subjects as history of psychology; history and present-day situation of psychophysics (for which a minor in Mathematics affords great advantages); experimental investigation of the data of sense with their temporal and spatial relations, for which a minor in biology, physics or physiology may be used; experimental work in the higher processes of memory, reasoning, association, apperception, and the learning process in relation to education; psychology of religion, either historical, or present-day characteristics of religious ideas both normal and abnormal; aesthetics, for the examination of laws of aesthetics, their origin, development and relation to art; problems of abnormal life in feeblemindedness, insanity, etc., which may be investigated in connection with the psychological clinic under the direction of the Professor of Psychiatry in the Faculty of Medicine.

MATHEMATICS.

In the Department of Mathematics graduate courses are offered in the various branches of advanced work which may be selected by candidates for higher degrees.

In past years courses have been given in General Theory of Functions, Theory of Sets, Theory of Substitution Groups, Theory of Continuous Groups, Invariants, Theory of Numbers, including the Theory of the Ideals, Theory of Algebraic Functions and of the Abelian Transcendents, Theory of Elliptic Functions, Calculus of Variations, Theory of Determinants and Matrices.

The Library offers opportunities for such research work as may be associated with the graduate courses, containing as it does the collected works of distinguished mathematicians, the various mathematical periodicals, and the published proceedings of the best known mathematical societies.

EDUCATIONAL THEORY.

In the Faculty of Education graduate study leading to one of the following degrees: Bachelor of Pedagogy, Doctor of Pedagogy, Master of Arts, Doctor of Philosophy—may be pursued. Courses for the degree of Bachelor or Doctor of Pedagogy are organised

jointly by the Faculties of Education of the University of Toronto and Queen's University. They are extra-mural courses, though summer schools (which the candidates are encouraged to attend and will be required to attend after 1918) are held in alternate years in Toronto and Kingston. Instruction given at Toronto in two of the subjects connected with the courses, namely, in Educational Administration and Educational Psychology; the other two, namely, History of Education and Science of Education are taught at Queen's University. For the degree of Doctor of Pedagogy a thesis on some educational topic must be submitted by each candidate. Assistance in the preparation of the theses is given by the teaching staff of the Faculty of Education, not only during the summer session, but also by correspondence and interviews during the winter session. The Faculty library contains all the books connected with the courses and also a great number which are valuable for the preparation of dissertations. These books may be borrowed by candidates registered in the courses. The Department of Education of Ontario exempts the holder of the degree of B.Pæd., or D.Pæd., from one or two (as the case may be) of the seven years of experience now required for Inspectors' certificates.

The M.A. course is an intra-mural course and must be pursued in accordance with the University regulations for the degree.

The Ph.D. course is also an intra-mural course. The candidates for the degree must attend two sessions at least and may be required to attend three, at the Faculty of Education. For this degree one major and two minor examinations must be passed, and a dissertation, which shall be a contribution to scholarship, must be submitted. Lectures on a major and a minor in each of the subjects—Educational Administration and Educational Psychology —are offered in the Faculty of Education. Such assistance and guidance to candidates as may be necessary is given in the preparation of the dissertation. Library facilities are granted, and if the topic selected for the dissertation demands experimental work in the classroom or with individual children, arrangements can be made to have these experiments carried out in one or other of the practice schools connected with this Faculty.

PART II.

THIS portion of the bulletin is devoted to a brief description of those departments of the University in which laboratory equipment is an essential element. The departments considered belong chiefly to the Faculties of Arts and Applied Science, but the rather indefinite line separating Arts and Medicine has compelled the inclusion of certain departments which, under the administrative system of the University, belong to the Faculty of Medicine.

The description does not include all departments of instruction commonly regarded as "scientific", even if that term be used in the narrower sense, for in some cases the laboratory plays but a minor rôle in the equipment of the department.

BIOLOGY.

This department as now constituted embraces the instructional subjects, general biology, vertebrate and invertebrate zoology, histology and embryology. Arrangements are also made for the carrying on of research in entomology, marine biology, and limnobiology.

The laboratories are located in the east portion of the Biological Building. This building was erected in 1889, during the period of office of Dr. R. Ramsay Wright as Professor of Biology, and was the first building to be provided in connection with the teaching of science in the Faculty of Arts. It was planned for the accommodation of the biological sciences and of the biological museum. The interval of about twenty-five years from the erection of the building to the present has been one of great expansion in the biological sciences, and has been marked in this university both by continuous improvements in laboratory facilities, and by the provision of separate laboratories for physiology, physiological chemistry, and botany; also by the expansion of the zoological collections which has taken place in connection with the Royal Ontario Museum of Zoology.

In 1889 gross material for zoological study was scant in amount, and the microscopic preparations consisted in large measure of stained preparations purchased abroad, but the introduction, a year or so later, of improved microscopic technique, coupled with

the activities of the staff in gathering together supplies of laboratory material, and subsequently the important connections established with biological stations, combined to provide the department with an abundance of material for laboratory instruction and research. The addition of new microscopes and of accessory apparatus has been continued from year to year until, at the present time, no worker need be deterred for lack of adequate equipment. Not a small part in this expansion has been brought about by the great increase in attendance in the undergraduate courses and by the establishment of new courses in connection with the work of the various faculties. Since 1889, and notwithstanding the separation of the branches above mentioned, the number of courses in this department has been increased from 9 to 33, while the attendance of students has increased to nearly 600. The maximum was reached in the last normal year, 1913-1914, with a laboratory attendance of 977.

Many men who have become prominent in the biological sciences are graduates either of this department or of the older Natural Science course. Some occupy important positions in American universities, while others are members of the staff of the University of Toronto. The list includes several younger men whose performance gives indication of important future contributions to science, and there are many former students of the department who as graduates in Arts or of the professional schools have distinguished themselves in educational, professional, or administrative work.

In contrast to analogous departments in many other universities in which graduate specialties have commonly been carried into the undergraduate courses, the Department of Biology has consistently endeavoured to retain in its major course a broad selection of zoological and botanical subjects, and to maintain connection both with the fundamental sciences, physics and chemistry, and the cognate branches, anatomy, physiology, and palaeontology. The wisdom of this arrangement has frequently been attested by our own graduates who have established themselves in research laboratories, and may be taken as evidence that research work in the biological sciences is supported by thorough preparation; further, that the department is in very good position to provide facilities for work, preparatory to research, for graduates of less advanced institutions.

The graduate work offered by the department, more especially in vertebrate zoology, histology, and embryology, includes a fair measure of what may be termed morphological zoology. During the past few years the rapid development of specializing fields such as experimental zoology and genetics has had the effect of attracting attention away from the morphological field. Now, however, signs are not lacking of a return, not to what has been designated a "morphological point of view", but rather to an improved conception of the interdependence of the biological branches. The cause of this development is partly to be found in the discouraging effects of too early specialization on graduate students, and partly in the great expansion of human anatomy into comparative anatomy and neurology, as well as in the striking advances of morphological palaeontology in making clear the details of animal succession. In this connection the department is fortunate in having developed through many years adequate collections of preserved material, serial sections, and illustrative museum preparations, useful for graduate investigation or for instruction accessory to cognate sciences.

Most biological investigations at the present time demand considerable proficiency in microscopic technique. Technical instruction is not given to any great extent in the undergraduate course, but the facilities available to graduates and special students are of the best. This fact should be of some importance to the colleges and secondary schools of Canada, inasmuch as the development of their biological laboratories will demand, not only adequate equipment, but also technical training on the part of those in charge, sufficient at least to make them independent of outside sources of supply.

During the past few years the department has given considerable attention to systematic zoology, more especially with reference to the species of Canadian animals and their distribution. This field, more extensively cultivated elsewhere, still offers abundant opportunities in Canada, whether as faunistic work or in connection with fresh water or marine oecology. Following the experience of other countries it may be anticipated that the development in Canada of national, provincial, and institutional museums, which is now in progress, will demand the training of a body of specialists for the various animal groups, while the development of economic work in connection with the fisheries and survey investigations

will require a considerable number of workers whose preliminary training in systematic zoology will be of the greatest importance. At the present time the department has in view the training of men in marine biology, a field now being developed by the Dominion Government, and facilities will also be afforded for investigations in fresh water oecology. The latter field is one to which many university laboratories are already devoting considerable attention.

Of the various fields of investigation in invertebrate zoology that of entomology, especially economic entomology, has always had a prominent place, the latter doubtless because of the great significance of insects in relation to agriculture and forestry. While the development of this field has made substantial progress in Canada, it is probable that the next few years will bring many opportunities for specialists in economic lines of governmental and educational service. For this reason, the department has made special provision for entomology among the graduate courses, for which expert supervision is available, supported by extensive collections of illustrative material.

The library of the department contains a valuable series of books and monographs, and also the more important periodicals devoted to current investigations in zoology, comparative anatomy, general biology, histology, and embryology. In conjunction with the libraries of allied departments, and the University and City Libraries, it is able to offer facilities both for general reading, and, in the majority of cases, for searching the literature in connection with special problems of investigation. When it is remembered that the provision of technical journals is one of the difficult problems for a scientific laboratory, the importance of having at hand complete files, the collection of which has extended over a long period of years, will be readily appreciated, more especially on the part of graduate students from institutions in which the library facilities have not yet had an opportunity of developing to a corresponding extent.

BOTANY.

The science of botany had its immediate beginnings in the honest attempts of European physicians of the Renaissance period to acquire a first-hand knowledge of the medicinal plants of their own countries. This purely utilitarian intention soon developed

into an ambition to include all plants, and that impulse is still driving a cohort of botanists into the remotest lands, into the realms of the micro-organisms, and into all geological ages.

Such ceaseless activities have necessitated a classifying of plants on a workable and generally accepted basis. Linnaeus, the greatest of all systematists, brought order out of chaos by the elaboration of his "artificial system" of classification; but modern botanists, stimulated by a belief in an evolutionary sequence, hopefully look forward to the working out of an even more perfect "natural system".

Meanwhile the development of the sciences of physics and chemistry, particularly the latter, made possible investigations on the nutrition and on the environmental reactions of plants. One practical result has been the establishment of agricultural experiment stations. This fundamentally important phase of botany offers to students well grounded in the physical sciences a wide field of achievement in a subject that is vital to agricultural, horticultural, and forestal pursuits.

The improvement of the compound microscope and of microscopic technique opened up the way to other untrodden tracts of the plant world—to studies on the lower and more minute forms of life, and on the internal organization of plants. The latter are being pursued with reference to physiological adaptations, questions of phylogeny and heredity, and to the identification of woods, fibres, and other structures.

The employment of suitable culture media further opened the way to the study of bacteria, yeasts, molds, and the higher fungi. These organisms are definitely related to the health of man and animals, to most of the diseases of plants, to the decay of organic matter, and to the maintenance of soil fertility. Some of them are essential to certain industries and a constant menace to others; in fact, they constitute the subject matter of a group of new and very practical sub-sciences—including bacteriology, zymology, and plant pathology.

A fuller acquaintance with plants has led to more philosophic observations on them in their habitats, and these have revealed structural and physiological adaptations of fascinating interest. It has likewise become more apparent that there is a distribution of plants and a succession of different types of vegetation on each kind of soil and in every climate regulated by ascertainable under-

lying laws. A knowledge of these operative laws will be of value in the practice of forestry and agriculture, and may help in reproducing a picture of the natural history of the past; their discovery will tax to the fullest the capacities of botanists of broad outlook.

Plant breeding is the last of the botanical fields to be cultivated and it gives promise of being one of the most fertile. In uncovering the laws of heredity, there is an assurance of improvement along pre-determined lines of the many kinds of cultivated plants, and of a more rational explanation of the course of evolution.

This survey of botany shows the wide scope of its activities. No other science affords greater opportunities for research on topics of purely knowledge-seeking interest, or on problems, the solution of which, will minister more directly to the welfare of mankind. It stands in the closest relation to man's everyday enjoyment of nature and life, to agriculture, horticulture, forestry, and to many of the industries. For the furtherance of these pursuits the demands for adequately trained experts are constantly becoming more insistent.

Consonant with the policy of the University, the Department of Botany offers facilities to investigators in the more important phases of the subject, and especially those that have to do with the fundamental principles of the science. The department, which is housed, together with the Department of Forestry, in the Forestry and Botany Building, has set aside several private rooms for graduate students, and these are equipped to meet the special requirements of individual researches. Abundant supplies of material are available and there is an adequate provision of microscopes, microtomes, paraffin baths, sterilizers, photographic appliances, and physiological apparatus. For purposes of study and reference an herbarium is maintained; it comprises many thousands of sheets of mosses, fungi, algae, lichens and slime molds, and extensive collections of flowering plants, drawn from various parts of the world, but especially complete in their representation of the spermatophytic and pteridophytic flora of Canada, including the western and subarctic areas. There is likewise a teaching museum, a palaeobotanical series, especially rich in microscopic sections of Carboniferous plants, collections of diseased woods, galls and pathogenic fungi, and an assemblage of anatomical and reproductive material of vascular plants, particularly comprehensive with respect to the Gymnosperms.

Greenhouses and a small botanical garden stand in connection with the laboratory building; these are used for purposes of experiment, demonstration, and the growing of plants for use in teaching and research; a limited amount of space in both is available for genetic, physiological, and pathological investigations. The garden is laid out synoptically, and exhibits, in addition to types, many foreign or rarer forms of some peculiar interest. Besides these, many specimens of introduced trees, shrubs, and herbaceous plants are grown on the university grounds, in Queen's park, and in the city conservatories; all of these are open to students of the department.

Floristically Toronto is very favourably situated, lying as it does on the shore of a great lake, and on the boundary between the Carolinean area of the Upper Austral zone and the Alleghanian area of the Transition zone of Merriam. The former area begins at the Humber plain on the western outskirts of the city and extends along Lake Ontario, through the Niagara district, and along Lake Erie to the west and south, while the latter lies to the north and east. The intermingling of the two areas is abruptly intimate in High Park, a highly diversified tract of 350 acres within the city limits. Here the natural conditions are preserved, for the sand plains of the park are carpeted with a Carolinean flora, and its deep intersecting ravines with Alleghanian types.

Two small rivers cut through the city, one to the west, the other to the east, and several other streams running parallel to these traverse the outlying country at short intervals; along and in all of these are excellent collecting grounds. Howard lake in High Park, and Toronto Bay, which is virtually a small lake separated from Lake Ontario by a narrow sand-bar, are rich in pond plants. Within easy reach of the city are mixed upland forests, swamps, marshes, sphagnum bogs, and glacial ponds. The district likewise exhibits a great diversity of soils within narrow limits, including heavy clays of glacial drift origin, rich humus, and light sands, providing, together with micro-climatic differences and an irregular topography, conditions for an intermingling of a remarkably varied group of plant associations.

The following partial list of publications recently issued will serve to indicate the character of the work being done in the department:

PROFESSOR FAULL.—The Cytology of Laboulbenia chaetophora and L. Gyrinidarum; The Natural History of the Toronto Region (Editor); Chondromyces Thaxteri, a New Myxobacterium; Fomes officinalis, a Timber-destroying Fungus.

PROFESSOR THOMSON.—The Comparative Anatomy and the Affinities of the Araucarineae; On the Pollen of Microcachrys tetragona.

PROFESSOR HOWE.—Physiographic and Forest Conditions of the Trent Watershed; The Reproduction of Commercial Species in the Southern Coastal Forests of British Columbia; The Effect of Repeated Forest Fires upon the Reproduction of Commercial Species in Peterborough County, Ontario; Distribution and Reproduction of the Forest in Nova Scotia in Relation to Underlying Rocks and Soils.

DR. A. COSENS.—A Contribution to the Morphology and Biology of Insect Galls; Insect Galls in Relation to Field Work in Elementary Science.

MISS MARJORIE GORDON.—Ray Tracheids in Sequoia sempervirens.

MR. G. H. GRAHAM (with PROFESSOR FAULL).—Bark Diseases of the Chestnut in British Columbia.

MR. A. E. ALLIN (with PROFESSOR THOMSON).—Do the Abietineae extend to the Carboniferous?

MR. G. R. MICKLE (with PROFESSOR THOMSON).—The Increase of the Food Supply for Ducks in Northern Ontario.

MR. T. A. SINCLAIR (with DR. COSENS).—Aeriferous Tissue in Willow Galls.

ANATOMY.

During the last twenty-five years, especially, the science of anatomy has taken on a broader scope, and from being largely a matter of description, it has become a science that touches on all sides the other biological sciences. With physiology it has long been in close contact, but in recent years, it has developed quite as fruitful an association with embryology; indeed, the arbitrary boundaries between embryology and anatomy have been obliterated and the anatomist is no longer content with a mere description of parts, but seeks from the phenomena of development a meaning of structure and relationship.

Problems of the greatest interest, not only from the anatomical standpoint but also on account of their bearings on the physiology and pathology of the embryo, have thus been brought into view, and the solution of one but serves to open the way to others still more enticing. The material necessary for such investigations is difficult to secure, but within recent years the Anatomical Department has been accumulating as occasion offered, and now possesses the nucleus of a collection of embryos, many of which have already been prepared for detailed study, while all are available for the purposes of investigation. Two important papers based on the collections have already been published, others are in the course of preparation, and a series of models of various embryonic organs have been prepared in the expectation that they will eventually form the basis for comprehensive developmental studies. All this material, together with numerous preparations illustrative of other vertebrate types, is at the disposal of competent graduate students, for whom it presents excellent opportunities for the study of embryological problems.

Abundant facilities for the study of problems in gross and microscopic anatomy are also offered by the department, which is equipped with the material, apparatus, and reagents necessary for such work, and the Anatomical Laboratory also offers opportunities, during the session, for investigations of a statistical nature, the number of cases available for examination each year being sufficiently large to permit the collection of data of this kind.

As regards anatomical literature, an essential for fruitful investigation, it may be said that the University Library contains an unusually complete series of the more important periodicals devoted to anatomical subjects, as well as quite an extensive collection of standard works and monographs. All these are at the disposal of graduate students engaged in research, and will be fully utilized, under the direction of the instructors in the department, in connection with problems that may be under investigation.

PHYSIOLOGY.

The laboratories for research in physiology are among the best that exist on this continent. There are a number of large, well-lighted rooms, supplied with tables, water, gas, air, and other facilities. Electric power is available for driving kymographs or other apparatus.

The special equipment is very extensive and is adapted to all the important phases of the science; much of this apparatus was devised by the late Professor Brodie.

A large room is fitted up with special apparatus for the analysis of blood gases and respiratory gases. The room is 22 feet by 28 feet and is equipped with large and small tables, cupboards, drawers, and many accessory appliances. Power for driving the various pieces of apparatus is supplied from shafting operated by motor. In all, twenty-eight different types of apparatus are provided for the analysis of blood gas, and six for the analysis of respiratory gases.

A room 22 feet by 20 feet is equipped as a dark room for work in electrocardiography and other investigations requiring the use of photography. This room contains apparatus for hydrogen ion determination, a Cambridge string galvanometer, one plate camera, and two film cameras. A smaller dark room is provided for developing and printing.

A room 30 feet by 22 feet is equipped with special appliances for carrying on investigations on the circulation. In addition to a large, motor-driven kymograph are many specially devised pieces of apparatus devoted to work of this kind. Provision for constant temperature work is made in a small room 13 feet by 13 feet which is located in one end of the larger room.

For surgery and histology there is a room 22 feet by 29 feet containing sterilizing apparatus and operating tables for surgical work. The room is also especially equipped for histological work, containing ovens, microtomes, and the minor apparatus required for this purpose.

The needs of physiological chemistry are amply met by a laboratory 22 feet by 31 feet equipped with all the usual appliances employed in this branch of the science.

A well equipped room is provided for the accommodation of students engaged in general research. This room is 22 feet by 31 feet and contains shafting, four large motor-driven kymographs, operating tables, an electrical clock, an especially devised tank for constant temperature work, and much accessory apparatus.

A number of small rooms are provided for the accommodation of advanced students engaged in special investigations.

A mechanic skilled in apparatus-making is employed on full time; his services are available for the repairing of apparatus and for the construction of new pieces that may be required for the prosecution of an investigation. The services of a glassblower are likewise available.

As indicative of the work being done in the department the following more recent publications may be mentioned:

F. A. HARTMAN and L. MCPHEDRAN.—Further Studies on the Differential Action of Adrenalin.

F. A. HARTMAN and L. M. FRASER.—The Mechanism of Vasodilatation from Adrenalin.

F. A. HARTMAN and L. G. KILBORN.—Adrenalin Vasodilator Mechanism in the Cat at Different Ages.

NOTE: Dr. I. I. R. McLeod, formerly of Western Reserve University, Cleveland, has been appointed to the chair held by the late Professor T. G. Brodie.

BIOCHEMISTRY.

Biochemistry in the broadest sense deals with the chemical structure of living organisms, and the chemical aspects of vital phenomena. Its field is, therefore, as wide as that of general biology, and there is no form of life which may not offer interesting problems to the biological chemist.

Many of the fundamental characteristics of living material are most clearly illustrated by the lowliest organisms; but for obvious reasons it is the chemical problems presented by the higher ones, and especially by man, that have received the greatest amount of attention. The progress of biochemistry within the last few years has been extremely rapid, and it would be impossible to enumerate all its recent achievements. Among them it may suffice to mention those related to the following subjects: the chemical constitution of proteins and nucleic acids; the metabolism of these substances within the body; the nature and purpose of the digestive process; the mechanism of the respiratory exchanges, and their precise measurement; the nutritional requirements of the body, and the manner in which they are modified by various circumstances; the value of individual food constituents in meeting these requirements.

The Department of Biochemistry possesses a number of laboratories adapted for graduate instruction, and adequately equipped for research, not only along purely chemical, but also along physio-

logical and histological lines. With the Department of Physiology the closest affiliation and co-operation is maintained. The animal room, the photographic room, the mechanic's shop, and the physiological apparatus in general, are available for use by the students of the Biochemical Department.

The library of the Medical Faculty, housed in the same building as this department, possesses the standard works of reference and files of all the biochemical journals.

The following titles indicate the nature of the researches which have lately occupied the attention of the department: On the Glomerular Excretion under Certain Conditions; On the Composition of Dilute Renal Excretions; Some Ancestral Features in the Blood Plasma of Vertebrates; The Role of Surface Tension in the Distribution of Salts in Living Matter; The Origin of Muscular Energy, Thermodynamic or Chemodynamic; The Physics of Secretion and Excretion.

NOTE: Dr. T. Brailsford Robertson, formerly of the University of California, has been appointed to the chair hitherto held by Dr. A. B. Macallum, Ottawa.

PATHOLOGICAL CHEMISTRY.*

In the scope of pathological chemistry are included the recognition of changes induced by pathological processes in the chemical composition of tissues and fluids, the detection and explanation of derangements of the normal chemical mechanisms of the body, and the development of chemical methods useful in the diagnosis and prognosis of disease. The subject is one, therefore, that involves the closest possible application of chemistry to the problems of clinical medicine. The results of such application become year by year of greater practical and theoretical importance; and there are now few pathological processes in relation to which the work of the pathological chemist can be ignored. Among the most noteworthy of his recent contributions may be mentioned those connected with the study of nephritis, acidosis, metabolic disturbances like diabetes and gout, and nutritional disorders such as beri-beri and the other deficiency diseases. The progress already made in these and many other directions has but revealed fresh problems for inquiry: the field of pathological chemistry offers at the present time an almost limitless opportunity for investigation.

* This department, under the administrative system of the University, belongs to the Faculty of Medicine.

The department is adequately equipped, not only with the ordinary apparatus of the biochemical laboratory, but also with the special instruments required for clinical work. Its rooms are well lighted and ventilated, and fitted throughout with gas, water, electricity, and air-blast. The general laboratories are supplemented by a balance-room, a polarimeter room, a gas-analysis room, a photographic dark room, an animal house, an operating room, and a kymograph room. There is table and locker space in the research laboratory for the accommodation of several workers. The Pathology Library, situated within the same building, possesses numerous journal sets and important works of reference. The close connection of the department with the pathological laboratories on the one hand, and with the Toronto General Hospital on the other, enables it to offer special facilities for the application of chemical methods to the study of clinical problems.

The following are the titles of some of the papers published from the department within the last three years: The Fat in the Blood in a Case of Lipemia; The Excretion of Nitrogen in Fever; Some Considerations in the Study of Infantile Tetany; A Method for the Estimation of the Trytophane Content of Proteins; On the Probable Nature of the Substance promoting Growth in Young Animals; A Hitherto Neglected Factor affecting the Determination of Minute Quantities of Creatinine; The Distribution of Creatinine and Creatine between the Corpuscles and Plasma of the Blood.

PATHOLOGY AND BACTERIOLOGY.*

The Department of Pathology and Bacteriology is situated in the same building as the Department of Pathological Chemistry. It forms the Pathological Department of the Toronto General Hospital. The building contains a number of rooms equipped with working places for research work. It is provided with the necessary apparatus such as incubators, centrifuges, microtomes, etc. There is a large photographic room and equipment for microphotography. Also a room equipped with kymograph respiration pump and everything necessary for experimental pathology. On the top of the building is a large animal house where the stock of laboratory animals is kept.

* This department, under the administrative system of the University, belongs to the Faculty of Medicine.

About two hundred and fifty autopsies are performed in the post-mortem room annually which provides an abundant amount of material for study.

The following may be cited among the more recent publications from the Pathological Laboratory:

H. K. DETWEILER.—The Treatment of Syphilis—Its effect upon the Wassermann Reaction using high Dilutions of Serum; The Technique of the Bordet-Wassermann Reaction for use in Public Health Laboratories; The Technique of the Bordet- Wassemann Reaction—An attempt to standardise the Technique; On the Modification in the Strength of the Bordet-Wassermann Reaction during the treatment of Syphilis.

H. K. DETWEILER and H. B. MAITLAND.—The Elective Localisation of Streptococcus Viridans.

PHYSICS.

Modern developments in scientific work have tended to accentuate the unity underlying all the various branches of endeavour. One hundred years ago the scientist, whatever may have been his peculiar interest in life—medicine, botany, or industrial science—possessed a fairly intimate knowledge of all the branches of science and their applications to everyday life. Towards the close of the last century, such had been the marvellous development of the individual so-called natural sciences, that no man could attempt to master more than a comparatively narrow range of subjects of scientific study. This resulted in an intensive study of various individual sciences with the result that an unfortunate system of over-specialisation developed. Branches of science have been assigned to "water-tight compartments", and a too intimate acquaintance with the facts and theories of neighbouring sciences, in many cases, has been discouraged. In very recent times, however, workers in every department of natural science have had impressed on them the need of more intimate acquaintance with developments in fields other than their own.

It is peculiarly the rôle of the study of physics to give the student a knowledge fundamental to all the other branches of scientific work. As it embraces the study and measurement of all natural forces, and the investigation of the phenomena of heat, light, sound, magnetism, and electricity, it gives to the chemist,

the biologist, the geologist, or the medical man a knowledge of the laws and principles governing the instruments with which he is constantly working. We might almost assert that much of the work in these other branches of science is merely the practical application of the laws of physics. Two or three examples taken from modern developments in physics may serve to illustrate this point. The extremely important application of X-rays, of the radiations from radium, and of ultraviolet light in the practice of medicine, and particularly in surgery, is a direct outcome of research in what we may call the realm of purest physics. One of the most remarkable developments in the study of the intimate structure of crystals, so much sought after by the crystallographer, has come through a very idealistic research into the properties of X-rays. Again, the opening up of an almost new field of industrial chemistry, that of colloidal chemistry, is due to work on the physical problem of the improvement of microscopic vision and to the purely physical quest for the molecule.

The foregoing observations must indicate that the study of physics in any university is fundamental to a pursuit of the other sciences. In the development of knowledge and industry, however, this science in itself plays two important rôles: in the first place, its principles are indispensable in practical life, and in the second place, it affords a most fertile field for the investigator.

As an example of the application of physics to the practical affairs of the world it may be stated that the recent great development in electrical engineering is a triumph for applied physics. The multiplicity of the applications of physics in practical life is the multiplicity of nature itself.

The fascination attending the prosecution of research in the realm of physics, in the past, has been the incentive which has led to most brilliant discoveries and has thrown the glamour of romance over the work. It is the aim of the pure physicist to discover the reasons underlying the working of natural forces, to pry into the make-up of all matter in order to gain as clear a picture of the almost infinitesimal universe of the atom as we have revealed to us in the almost infinite universe of the stars.

In the Department of Physics the attempt has been made to develop these three aspects of the subject: (1) as a ground-work for all sciences; (2) as leading to practical applications in the industries; (3) as contributing something to the advancement of knowledge.

At present the Department of Physics in its undergraduate courses serves the students of the Faculties of Arts, Forestry, and Medicine, but not those of the Faculty of Applied Science. The prescription of laboratory work on an extensive scale for undergraduates was inaugurated here, as in other universities, about the year 1900; since that date the importance of this type of work has met with an increasing degree of recognition.

The higher branches of pure physics involved in graduate studies and in the prosecution of research have been developed side by side with the undergraduate work. The general plans for the carrying on of investigations are founded, in large measure, on the practice of Professor Sir J. J. Thomson of Cambridge, in whose laboratories the director and other members of the staff have worked, and with whom close touch has been maintained for many years.

During the decade 1899-1909 particular attention was given to the study of radioactivity and atmospheric electricity, with the result that numerous papers on the radioactivity of common substances, such as the metals, snow, and ice were published by the members of the staff.

During the last ten years the director has turned his attention more particularly to work on spectroscopy: much valuable apparatus for work on the extreme ends of the spectrum has been collected and many new results of very great interest in the theory of the structure of spectrum lines have been published. Other lines of research have been pursued by other members of the staff, but the above indicates the character of the work as related to the progress of pure physics.

The present Physics Laboratory, which was erected about ten years ago, is acknowledged by competent judges to be one of the best to be found anywhere, both from the point of view of building and of equipment.

The whole front portion of the building is given up to lecture rooms, so situated that students may enter or leave without passing through any part of the building devoted to laboratory work. Naturally most of the available space is devoted to undergraduate class-work, but an increased accommodation is being provided from year to year for research workers.

The building is arranged on the unit system, that is, most of the walls dividing room from room can be removed without affecting

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the stability of the structure, thus allowing great elasticity in the arrangement of the rooms themselves. Every unit in the building is supplied with a sink at which are available, hot and cold water, high pressure steam, compressed air, and vacuum. The latter two are supplied through pipes connected with automatically controlled pumps in the basement of the building.

Probably the most essential item of equipment in the building is the workshop; this is a complete, modern machine shop with speed, power, and precision lathes, grinders, milling machine, shapers, etc. Two fully competent machinists and a helper are kept busy here throughout the year and the shop does not hesitate to undertake the construction of the finest piece of apparatus. In connection with the workshop is a liquid-air plant which is so necessary for modern research problems, particularly in vacuum work. In connection with the workshop the department employs a glass-blower for full sessional time; in this way any work in glass or quartz can be carried out in the laboratory.

With regard to standard physical apparatus the laboratory is amply equipped. This apparatus may be divided into two classes: (1) for lecture demonstration; (2) for experimental work in laboratory classes and for research. Under the first class particular attention is due to the fine acoustical collection purchased for the University by the late President Loudon from the most famous acoustician of the last century, Rudolf Koenig of Paris. This collection is probably not equalled on the continent. As for the second class, in addition to the apparatus available for work in electricity, radioactivity, etc., such as quadrant electrometers, delicate electroscopes, powerful electrical machines and induction coils, the laboratory contains a unique collection of valuable apparatus for work in spectroscopy including spectroscopes and spectrographs, not only of various glasses and quartz, but also of fluorite. Special forms of spectroscopes are available for work *in vacuo* and also for measurements of the wave length of X-rays and for the investigation of crystal structure. This class of apparatus is continually being added to, both by purchase, and from the laboratory workshop.

The library of the department occupies a large and well-lighted room at the front of the building. In addition to a large series of general text-books on physics, the central library of the university has placed here the bound volumes (dating from 1900) of the

various scientific journals which relate principally or entirely to physics. These books are available for research workers and students at all times.

Some years ago the department adopted the policy of engaging a sufficient number of assistant demonstrators to ensure the proper discharge of routine duties by half-time service, on the understanding that the other half-time be devoted to research. The absence of some members of the staff, owing to the war, has tended to increase the work of those remaining, but the practice still is to allow each assistant one-half time for research work. From year to year some of these positions are open to graduates of other universities who may desire to proceed with advanced work.

A most helpful element of the laboratory organisation is the fortnightly seminar which is open to all students and research workers. At these meetings the current scientific periodicals are reviewed: by this means the development of the science is kept constantly in view.

Problems for research work are submitted to candidates by the director of the laboratory who remains in control of all investigations. Graduate students, however, have the advantage of close personal relations with all the members of the staff and the benefit of their experience along special lines of physical research.

On account of the varied range of the work in physics and its position as a fundamental science, the research worker in this department suffers from the disability that his knowledge cannot be turned so directly to account for his own financial gain as, for example, can that of the industrial chemist or of the botanist who turns to forestry. The physicist has not often a perfectly apparent position available at the conclusion of his period of study and research. Nevertheless, experience has shown that many fields of usefulness, not without reasonable emolument, are open to graduates who have devoted some years to research in physics. Men of this type find their life work more particularly (1) in universities and colleges; (2) in scientific departments of the government; (3) in private laboratories of large corporations.

The demand for thoroughly trained physicists for positions in institutions of learning is greatly in excess of the available supply. The department is constantly in receipt of requests for men of this

type to fill important positions in Canada and abroad. At the present time a large number of our graduates are holding important academic positions in Canada, England, and the United States.

The development of the scientific departments of the government, more particularly the Topographical Survey and the Department of Astronomy, has opened a field into which many of our best men have been absorbed. Since the opening of the war, also, the special fitness of physicists to undertake the solution of problems connected with military and naval affairs has led to the employment of many of our graduates by the Imperial Government.

Of recent years there has been a gradual emigration of our best trained workers to the industries of the United States, chiefly to the laboratories maintained by large corporations, such as the General Electric Company of Schenectady and the Western Electric Company of New York.

In view of the experience of the last five or ten years there is now no doubt that there are always positions waiting for men trained in research in physics.

Of recent years the Director has turned his attention more particularly to problems in spectroscopy and Professor Burton to investigations on colloidal solutions. Professor Gilchrist has devoted his time chiefly to physical problems relative to the industries and Professor Satterly to the radioactivity of rocks, soils, and natural waters.

As indicative of the work done in the Physics Laboratory, the following partial list of papers recently issued may be of value:

Professor McLennan.—On the Constitution of the Mercury Green Line A.U., and on the Magnetic Resolution of its Satellites by an Echelon Grating; On a Fluorescence Spectrum of Iodine Vapour; On the Mercury Green Line L-5461; On the Fluorescence of Iodine Vapour excited by Ultra-violet Light; On the Absorption Spectrum of Zinc Vapour; On the Single Line Spectra of Magnesium and other Metals, and their Ionising Potentials; On the Ionisation Potentials of Magnesium and other Metals and on their Absorption Spectra.

Professor McLennan (in collaboration with D. A. Keys).—On the Mobilities of Ions in Air at high Pressures; On the Ionisation of Metallic Vapours in Flames.

Professor McLennan (in collaboration with E. Edwards).—On the Ultra-violet Spectrum of Elementary Silicon; On the Absorption Spectra of Mercury, Cadmium, Zinc, and other metallic Vapours.

Professor McLennan (in collaboration with C. G. Found).—On the *delta* Radiation emitted by Zinc when bombarded with *alpha* rays.

Professor McLennan (in collaboration with R. C. Dearle).—On the Infra-red Emission Spectrum of the Mercury Arc.

Professor McLennan (in collaboration with J. P. Henderson).—Ionisation Potentials of Mercury, Cadmium, Zinc, and the single and many-sided Spectra of these Elements.

Professor McLennan (in collaboration with A. Thomson).—On the Bunsen Flame Spectra of Metallic Vapours.

Professor Burton.—On the Relation between the Adiabatic and Isothermal Young's Moduli of Metals; An Experiment to show the Mechanical Tension excited by an Electrical Charge on a Conductor; Colloidal Solutions.

Professor Burton (in collaboration with W. B. Wiegand).—Effect of Electricity on Streams of Water Drops.

Professor Gilchrist.—An Absolute Determination of the Viscosity of Air.

Professor Satterly.—On the Number of Alpha Particles expelled when an Atom of Thorium Emanation disintegrates; Recherches sur la teneur en emanation du radium contenu dans divers sols et sur la radio-activité du gas des marais et de certaines eux; The Quantities of Radium and Thorium Emanations contained in the Air of certain Soils.

Professor Satterly (in collaboration with R. T. Elworthy).—The Radio-activity of some Canadian Springs.

Mr. H. A. McTaggart.—Electrification at Liquid-gas Surfaces.

CHEMISTRY.

Instruction in chemistry is given to undergraduates of the University of Toronto by the Departments of Chemistry, Applied Chemistry, Electrochemistry, Biochemistry, Pathological Chemistry, and Agricultural Chemistry (at Guelph). Each of these departments has laboratories and equipment of its own.

To the department first named is allotted the "Chemical

Laboratory," a three-storey building of 30,000 square feet floor space, erected in 1895, and equipped with lecture rooms, laboratories, store-rooms, workshops, fire-proof rooms, etc. In this laboratory undergraduates in Arts, Medicine, Forestry, and Veterinary Science are given lectures and laboratory practice in general, organic, and physical chemistry.

Since 1892 "the prosecution of a selected research" has been required of students in the Department of Chemistry as a prerequisite to the degree of B.A. For the last twenty years all laboratory assistants (eight in 1914, five at present) have been allowed half-time for chemical research.

Lectures and colloquia on advanced organic and physical chemistry are provided for graduate students; the library contains complete sets of practically all the important chemical journals; and the laboratory is in possession of an unusually complete collection of Kahlbaum's chemical preparations, organic and inorganic. There is a good supply of instruments and apparatus suitable for research, but the policy of the department has been to purchase special apparatus when needed, rather than to make the assembling of a large stock an end in itself.

Many of the honour graduates in chemistry occupy chairs in the universities of Canada, England, and the United States; others are employed in research laboratories or in administrative positions under the Provincial and Dominion Governments, or in private corporations; while every graduate since 1914 and many undergraduates, are working under the Imperial Munitions Board, or in factories controlled by it.

At the present time, researches are being carried out in the preparation of *m*-benzoyl-benzoic acid, on the vapour tension of mixtures of organic liquids, on the adaptation of yeast to toxic agents, and on the extraction of nicotine from tobacco refuse. Numerous papers on chemical subjects have been published: the following will serve as illustrations:

Analytical.—Papers on the separation of antimony, arsenic, and tin; on the determination of tartaric acid, nitrates, phenol, boric acid, sulphates, naphthoquinone, etc.

Inorganic.—Papers on water gas; on the cadmium-ammonium chlorides; on the reaction between chromic chloride and substituted ammonias, between silver and sodium phosphate, between hydrogen sulphide and sulphur dioxide, etc.

Organic synthesis.—Papers on the synthesis of esters of antimony trioxide, arsenious acid, phthalic acid, *o*-benzoyl-benzoic acid; on *o*-benzoyl-benzoyl-chloride and cyanide; on the phthalyl cyanides, etc.

Chemical kinetics.—Papers on the rates of oxidation of the halide acids by the oxy-acids of the halogens, by arsenic acid, and by chromic acid; of ferrous salts by oxygen and by chromic acid; of naphthalene by permanganate. Also papers on induced reactions, etc.

Phase rule.—Papers on the identification of basic salts; on basic bismuth nitrates, sulphates, and oxalates; on hydrates and acid salts of ferrous sulphate. Binodal curves for fifty systems of organic liquids; etc.

Surface action.—Papers on the composition of surface layers of amyl alcohol solutions; on the distribution of colloids between immiscible solvents; etc.

Mathematical chemistry.—Papers on Gibb's function *zeta*; numerical values of certain functions; on a general method of calculation in chemical kinetics; on the theory of direct methods of determining migration; on the mathematical theory of changes of concentration at the electrode; on the influence of diffusion on the E.M.F. produced by centrifugal action; etc.

Chemical didactics.—Papers on lecture experiments to illustrate electrochemistry, reversible actions, reactions in heterogeneous systems, surface tension, hyperbasis. Models to illustrate the benzene theory, ionic migration, the gas laws. "The chemical philosophy of the High School text-books." "The new requirements in chemistry at matriculation."

ELECTROCHEMISTRY.

The Electrochemical Laboratory consists of nine rooms in the Chemistry and Mining Building, where theoretical and practical instruction in this subject is given in close co-operation with the Departments of Chemistry and Applied Chemistry.

The laboratory is well supplied with apparatus for chemical and electrochemical analysis, and with electrical measuring apparatus, including Weston instruments, potentiometers, electrometers, pyrometers, bridges, etc. One room is devoted to work with the oscillograph on reactions at the electrode during electrolysis, and

another is fitted up as a workshop for the improvisation of apparatus used in teaching and in research. There is a storage battery of twenty-seven sixty-ampere units, besides numerous portable cells; a motor-generator set to furnish 600 amperes at five volts, or 300 amperes at ten volts; and the laboratory is directly connected to a special generator at the power plant of the university from which direct current may be drawn up to 1000 amperes at 110 volts. Alternating current from a specially controlled generator in the Electrical Engineering Laboratory is also available; rheostats and measuring instruments for these heavy currents are provided. The laboratory is also equipped with a number of types of electric furnaces, and material for their construction.

The above equipment is regularly used for undergraduate instruction, and has rendered possible a number of commercial investigations on the reduction of cobalt from its oxide, the manufacture of cyanamide, formaldehyde, magnesium, etc.

Among the papers of more purely scientific nature published from the laboratory are: On the Behaviour of Copper Anodes in Chloride Solutions; The Determination of Zinc and Cyanide in Brass Baths; The Formation of Films on Copper Electrodes; The Electrolysis of Solutions containing Iron Salts and Iodides.

ASTRONOMY AND ASTROPHYSICS.

The department is provided with an excellent equipment for the carrying on of undergraduate work in astronomy. Among the more important pieces of apparatus may be mentioned the following: portable telescopes, a fixed telescope for observation of sun spots, globes, charts, spectroscopes, and an excellent collection of lantern slides, many of which are from unique original negatives. In addition, the Director of the Meteorological Service permits the students to use the transit instrument and the 6-inch equatorial telescope of the Meteorological Observatory on Bloor Street.

Astronomy has always been an interesting field for research, and even with modest equipment, amateurs, as well as professional astronomers, have done work of permanent value. In former times all observation was visual, and its chief object was the accurate determination of the positions of the heavenly bodies, the measurements of their distances apart and of their diameters, etc. This is now often called the "old astronomy". With the introduction of the

spectroscope began the "new astronomy" or astrophysics, the aim of which is to determine the physical nature and the condition of the stars. It is not too much to say that within the last fifty years our knowledge of the celestial bodies has grown as much as it did in all the centuries before. In both of these two great divisions, immense advances have been made by the application of photography, by means of which the possibility of carrying on researches has been enormously extended. When once the photographs have been secured they can be studied at leisure and at places remote from the observatories taking them.

The greatest collection of astronomical photographs in existence is at Harvard College Observatory, Cambridge, Mass. In it there are over 240,000 negatives, many of which are 8 by 10 inches in size. They were taken by instruments of various kinds at Cambridge and at the southern station of the observatory, located near Arequipa, Peru, at an elevation of 8060 feet. The Director of the Observatory, Professor Edward C. Pickering, cordially offers to place these photographic plates at the service of students desiring to carry on investigations. Indeed the offer is made that any plates, not on hand, which may be required in an investigation, will be taken if it is possible to do so. In this way, graduate students will be enabled to make researches in the various branches of astronomy, such as the study of variable stars and the discovery of new ones, investigations of stellar spectra, and other subjects. The department possesses measuring machines and other instruments for the proper study of these plates, and some interesting investigations are under way.

THEORETICAL MECHANICS.

While this department is equipped with the apparatus required for all ordinary investigations, it would be necessary, in the case of special research work, to supplement the present equipment with appliances especially designed for the object in view.

The nature of the work being done in the department is indicated by the following suggestions for graduate researches:—

A wide field for investigation is presented by the study of the fundamental principles upon which the science of mechanics depends: this would include the vector laws, the properties of the centre of gravity, and the theory of energy.

An inquiry of great interest and importance would be a determination of the conditions of stability of a solid body, with special reference to those cases where stability is to a certain extent maintained by rotation.

While it is difficult, in some cases, to draw the line between the scope of this department and that of applied mechanics, an examination of the laws of friction, both sliding and rolling, might well fall within the province of either department.

GEOLOGY AND PALAEONTOLOGY.

The science of geology offers unusual opportunities to the investigator by reason of its varied phases and the local character of many of its problems. In a young country like Canada, with vast areas of land uncharted geologically and with immense stores of mineral wealth awaiting development, there is ever a fruitful field for the prosecution of geological research.

While certain phases of the subject are capable of solution in the laboratory, geology proper demands the obtaining of data by work in the field. Toronto is very favourably situated for investigations in glacial geology; several Palaeozoic formations are easily accessible and the great Pre-Cambrian core of the continent is distant only a few miles. Nevertheless, our advanced students will find that the best opportunities for work in the field are afforded by the Geological Survey and the Mines Branch of the Department of Mines of Canada, and by the Bureau of Mines of the Province of Ontario.

The department is housed in the Chemistry and Mining Building where the necessary space is available for the prosecution of advanced geological studies. The department also occupies rooms in the Royal Ontario Museum in order that the fullest use may be made of the collections there available.

The pursuit of geological investigation does not require extensive laboratory equipment or expensive apparatus, but rather, large collections of material and good library facilities. The department possesses the surveying instruments necessary for the carrying on of field geology and is equipped with complete electrically operated machinery for the sawing, grinding, and polishing of rocks, minerals and fossils, and for the making of microscopic sections.

Extensive suites of specimens illustrating the different branches

of geological science are available, both in the Chemistry and Mining Building and in the Royal Ontario Museum. Particular attention has been directed to the acquisition of material illustrating Archaean, mining, and Pleistocene geology. In addition to the named and labelled material, which is of great value for undergraduate work and for comparison, the department possesses many unworked collections which are awaiting the attention of research students.

The work in palaeontology is conducted almost entirely in the Royal Ontario Museum where commodious work-rooms afford every opportunity to the advanced student. The collections displayed in the galleries are very extensive and compare well, as far as the Invertebrata are concerned, with those of any educational institution in America. In addition to the labeled material the store rooms contain many collections of unidentified fossils from various horizons in Canada and abroad; these are available as subjects of investigation by graduate students.

Research in geology, more perhaps than in the other sciences, is dependent upon access to the varied literature of the subject. Especial attention has been directed to the acquisition of the reports of states and scientific societies and of separates and pamphlets dealing with the various phases of the subject. A departmental library is maintained in the Chemistry and Mining building where also the private libraries of the members of the staff are open to advanced students. The palaeontological library, housed in the museum, is very complete, especially with regard to American Invertebrate fossils. An elaborate system of cataloguing has been adopted whereby the contents of the library are made easily and immediately available. A separate system is used for maps, of which a large collection is maintained in the Chemistry and Mining building in a room designed for work in cartography.

A science so complex as geology necessarily presents many problems involving the more fundamental sciences of physics, chemistry, biology, and mineralogy. The department does not maintain laboratories for investigations in these branches, but it is fortunate in being closely associated with strong departments devoted to these subjects.

As indicative of the nature of the investigations carried on by members of the staff and by students in the department, the following publications may be cited:

Professor Coleman.—The Nickel Industry; Climate and Physical Conditions of the Keewatin; The Lower Huronian Ice Age; An Estimate of Post-Glacial and Inter-Glacial Time in North America; Dry Land in Geology; Gold Fields of Western Ontario; The Michipicoten Iron Range; The Iroquois Beach in Ontario.

Professor Parks.—Stromatoporoids of America; Palaeozoic Fossils from Hudson Bay; The Building and Ornamental Stones of Canada; The Genus Protaster with Description of a new Species; On two new Crinoids from the Trenton Formation of Ontario; On a new Cystid from the Clinton Formation of Ontario.

Mr. MacLean.—Oil Shales and Lignite Fields of Southern Manitoba and Saskatchewan.

Dr. E. Burwash.—Geology of the Nipissing—Algoma Line; Geology of Michipicoten Island.

MINERALOGY.

The trained mineralogist may find employment in academic work, in the investigations of state bureaus of mines, or in the development of the mineral industry. In these various lines of work problems arise from time to time which require for their solutions the assistance of one trained to methods of research and acquainted with facts which have been established by previous workers in the field of mineralogy. While this subject is frequently economic in its bearing, there are many branches which are, for the time at least, purely academic. From the findings of pure science the economic mineralogist draws, in the development of the practical application of the subject.

The laboratories of the Department of Mineralogy are arranged to give courses of instruction in elementary mineralogy, and to conduct investigations looking to the advancement of the science. For the student of petrography facilities are offered for the preparation of thin sections, and many types of petrological microscopes are available for their study. Laboratory facilities are provided for the chemical analyses of rocks, as well as for the separation of component minerals by heavy solutions and by electro-magnetic methods. For purposes of comparison very large series of typical rock specimens and of thin sections are available. The student of crystallography will find an adequate supply of goniometers of various designs, microscopes and other apparatus

necessary for the determination of the optical properties, and ample material—models and crystals—for the pursuit of morphological crystallography. The laboratories for chemical mineralogy are equipped with sets of blow-pipe apparatus for simple qualitative work, while for quantitative analyses, chemical balances and the appliances required for gravimetric, volumetric, and electric determinations are provided.

Progress in any scientific field is almost impossible without ready access to the literature in which the progress of the past is recorded. The library of the University contains most of the periodicals in which original articles on mineralogy are usually found. It is also possible to obtain for reference any scientific periodical contained in the following libraries in the city of Toronto: the Public Library, the Parliamentary Library, and the library of the Royal Canadian Institute. As the library of the University is being constantly augmented by publications of interest to this department, it is hoped that it will be rarely necessary to look to libraries outside of Toronto for the necessary works of reference.

In the study of mineralogy the museum is scarcely less necessary than the laboratory or the library. For purposes of comparison the splendid collections of the Royal Ontario Museum of Mineralogy, which is more or less under the control of the University of Toronto, are available. As this collection from the point of view of completeness, systematic arrangement, and quality of material is one of the best on the continent, it is of very great advantage to students pursuing graduate work at Toronto.

The general character of the investigations carried on by staff and students in the Department of Mineralogy during the past two years may be best seen by a consideration of the following list of papers:

Professor Walker.—Spencerite, a new Zinc Phosphate from British Columbia; Minerals from Baffin Land; Certain Mineral Occurrences at the Worthington Mine, Sudbury, Ontario, and their Significance; On the Separation and Determination of Nickel and Cobalt; Hopeite from the H.B. Mine, near Salmo, B.C.

Professors Walker and Ledoux.—Cerussite from the H.B. Mine, near Salmo, B.C.

Professors Walker and Ledoux and Mr. A. C. Wheatley.—The Crystallization of Parahopeite.

PROFESSOR PARSONS.—Proustite from Cobalt, Ontario; Iron Deposits of Hunter Island with Notes on Gunflint Lake Region; The Productive Area of the Michipicoten Iron Ranges.

PROFESSOR A. LEDOUX.—Sur les Propriétés Géométriques des Melanges isomorphes; Mineralogical Exploration of East Templeton District, Quebec; Preliminary Report on Field Operations in Canada; Note on Diopside Deposits in Templeton District; Détermination des Indices de Réfraction de Lames minces de Cristaux anistropes par l'Emploi de la Lumière parallèle oblique; Sur une nouvelle Méthode pour la Détermination des Indices de Réfraction des Liquides.

DR. W. H. MCNAIRN.—The Growth of Etch Figures.

DR. H. V. ELLSWORTH.—A Study of Certain Minerals from Cobalt, Ontario.

MR. J. E. THOMSON.—Some Canadian Cerussite Crystals.

CIVIL ENGINEERING.

It should not be forgotten that it is not the privilege of the school of engineering to graduate the finished engineer. This limitation on its usefulness is one of necessity rather than of policy, since the usual academic training provided for the student of engineering affords little or no opportunity for acquiring a knowledge of professional practice. To give him instruction in the principles upon which the science and art of engineering are based and to train him to apply those principles to the solution of engineering problems is admittedly one of its important tasks. For the engineering school to spend time in imparting information which can be more readily and correctly obtained in practice and to neglect in consequence fundamentals not ordinarily learned in the field, is clearly a dereliction of duty. It is more important, for example, that the student should know something of theoretical mechanics than that he should possess skill and speed in the execution of detail shop drawings; and better that he have some knowledge of the theory of elasticity than that he be skilled in some mechanical art. A knowledge of professional practice on the contrary can be obtained only through years of patient work; while resourcefulness, a trained judgment, and an appreciation of values, human as well as economic, are largely the results of responsibilities carried by the individual under commercial conditions.

That post graduate study in Civil Engineering, theoretical and experimental, should follow in general the lines just indicated will also be conceded. The whole work should be of such a character as is not easily or usually overtaken in the field, notwithstanding the fact that many of the experimental problems will have had their origin there. For the intelligent attack of such, an acquaintance with advanced engineering theory and with the mathematics necessary to its elucidation is necessary. A knowledge of differential equations, hyperbolic functions, higher graphics, and higher curves would seem to be essential.

Experimental work in which the facilities of engineering laboratories are employed, should have in all cases a definite engineering objective. The materials of construction, their microscopy, structure, fabrication, and deterioration constitute one group of problems; the investigation of special appliances, of new types of construction, of failures in accepted types, and the co-ordination of the theory of engineering design with performance in service comprise another. One or two illustrations will suffice. Readers familiar with the progress of building construction during the first decade of the present century will recall the unfortunate series of failures in reinforced concrete structures that occurred during those years. Reinforced concrete was a material new to the designing engineer and unknown to the building contractor. The fundamentals in the design of structures made of it were not generally known; mistakes were often made and failures were common. It was not until the laboratory investigator through data obtained from tests made on full-size beams, columns, and slabs, had reduced reinforced concrete design to a rational basis that safety and economy resulted. What is true of reinforced concrete applies also to steel and timber and tile. The Report of the Royal Commission of Inquiry on the Quebec Bridge, 1908, concluded a discussion on the testing of full-size steel columns with the statement that "it is generally felt that modern bridge work has grown to such dimensions that further investigations are desirable".

The Engineering laboratory, also, provides a means whereby the findings of theoretical investigation may be substantiated by actual experiment. The hypotheses of Galileo and Navier had to be confirmed by test before their acceptance became general. All theories of engineering are subject to the same rule. The laboratory, in the final case, is required to vindicate and to supplement

the truth of assumptions or to expose their fallacy. In consequence the earlier practice of breaking the members of structures solely to find out what force was necessary has passed away and the present demand is for accurate observation and precise measurement that may aid in the establishment of principles of design. This demand had resulted in a more careful study of the action of materials under stress and in the development of precise methods of measurement—a field indeed in which there is still much scope for advancement. That such methods are justified and are productive of results whose value far exceeds the outlay will be conceded by anyone familiar with the development of engineering science during the past generation. With similar and equally diversified fields before him in sanitation, hydraulics, and road engineering, with a well equipped laboratory at his hand, and with a fairly well stocked library available for reference, the alert post-graduate student at Toronto will find much that offers a reasonable chance for useful accomplishment.

There are several classes of men to whom post-graduate work in Civil Engineering will be of real importance. Among them are those who through temperament or inclination are attracted to research or to teaching. For both classes it is desirable that a thorough acquaintance with underlying principles should be another part of the equipment they bring to their work. As countries become older, greater and greater differentiation in the curricula of their engineering colleges appears, and men of special rather than of general qualifications are in demand for the instructional posts. So also the great and pressing question of the application of science to industry is a problem of the older community as against the new, and with it comes a demand for the investigator well trained in methods of engineering research. As *development* has been the watchword of American progress in the past, so will *conservation* be that of the future. The approaching exhaustion of the more desirable coal deposits of this continent, the impoverishment of the soil, and the stripping of the forests will create problems for future generations in comparison with which such present-day issues as tariffs and the franchise will be of very minor concern. New sources of energy will have to be found if the race is to escape either partial depopulation or extensive migration to tropical regions. In the solution of these problems the engineer of the future will find a work worthy of his finest endeavours.

Another class comprises those who may become identified with the design and execution of works for which, because of their magnitude or their type, precedent offers little assistance. Standard methods and designs can be employed only where there is much repetition. The Quebec Bridge, the Hudson and Detroit tunnels, the Catskill Aqueduct, and the Niagara Power Development are of the class referred to. In all these, preliminary study of the most scrupulous character has been carried on in order that efficiency, safety, and economy may result. For this work the most highly trained technical men were and are in demand and each project in its own field has represented a distinct progress in the art over that of an earlier date.

The Department of Civil Engineering in this university is prepared to accept a limited number of students in post-graduate study along the lines briefly indicated above. For the experimental investigation of problems of special interest to the structural engineer the Strength of Materials laboratory has an equipment which for variety and capacity is not surpassed in Canada. The Roads Materials laboratory has also a complete series of modern appliances Through the courtesy of the Secretary of the Ontario Board of Health the facilities of the excellently equipped laboratory which the board maintains at Stanley Park, Toronto, have been placed at the service of students in Sanitary Engineering who desire to investigate problems in municipal sanitation. In the Engineering Library are to be found most of the reference texts and periodicals required for consultation.

MECHANICAL ENGINEERING.

In the Department of Mechanical Engineering are laboratories for giving full instruction in the theory of steam, air, and gas engines and turbines, as well as in the laws of flow of incompressible and compressible fluids. In addition this department has charge of the work in hydraulics and possesses the apparatus necessary for studying the laws of flow and measurement of water, as well as the theory and operation of various forms of water turbines and pumps.

About eight years ago the University erected entirely new laboratories for the above purposes, the floor space set apart for the steam, air, gas, and other thermodynamic work exceeding 10,000

square feet, while nearly the same space was reserved for hydraulics. As the building is comparatively new, the equipment is quite up-to-date and in excellent condition for delicate experimentation.

As detailed descriptions of the laboratories have been published elsewhere it will suffice, here, to give only a general account of the apparatus.

There is a steam engine arranged for research in connection with its operation at various loads, and the use of steam jackets with a condenser. A large amount of work has already been done on this machine, which has been especially constructed for the purpose. In addition to this there is an air compressor with compound steam cylinders and two-stage air cylinders, capable of compressing air up to 100-lbs. pressure. This machine is fitted with Meyer cut-off gear on the steam cylinders, and with Corliss inlet gear on the low pressure air cylinder. With this machine a very large range of work may be done, such as the distribution of power between the two cylinders, and the effect of steam and air pressures, etc. Indicator diagrams may be taken the study of which gives valuable information. This compressor has already been used to carry out a series of researches, still in progress, on the methods of measuring the volume of air discharged, and also on a number of other similar problems.

A tandem compound engine with shaft governor is useful for the study of this method of compounding. The effect of various distributions of the load between the cylinders may be studied: this subject offers a good field of work. This engine, together with another in the laboratory, enables investigations to be made on problems connected with shaft governors.

A three-ton ammonia compression refrigerating machine, which is steam driven, also forms part of the equipment, offering an opportunity for the study of many problems connected with refrigeration. During the past few years, this machine has afforded the means of carrying on a number of researches in connection with the heat losses through various substances: the results of these inquiries have been of such practical value as to be used in determining the proper materials for the construction of buildings.

Among other pieces of apparatus using steam may be mentioned some smaller engines for work on valve setting, high speed engines of large size, a number of different types of injectors, and apparatus for the study of pipe coverings and of steam traps.

Of the internal combustion engines there are several, two of which may be used with city or producer gas, and also with coal oil or other grades of fuel. These engines are of great value for certain investigations, being arranged for variable compressions and for different gaseous mixtures; indicator diagrams make possible a complete study of the results.

A two-cycle gasoline engine has also been installed with which an optical indicator is fitted for special work. There is also a complete suction gas plant of 20 horse-power, apparatus for gas, coal, and oil testing, and machinery for the testing of belts and other equipment.

In the hydraulic laboratory there is a very complete installation of turbines, pumps, orifices, tanks, dynamometers, current meters, and other appliances. Two large four-stage turbine pumps of modern construction are available for pumping the water; they have a capacity of about 2½ million gallons of water per day. These are also useful for experimental work on turbine pumps, which have so recently come into prominence in Ontario cities in connection with the use of hydro-electric power. Experiments along this line are greatly assisted by a specially designed pump on which much work of importance has already been done. There is at present a great demand for men qualified to undertake investigations of this kind.

Four water turbines are available, two of the reaction type and two of the Pelton type. Some of these turbines are of the most modern construction and are well arranged for the study of turbine problems.

The laboratories are fitted with much minor equipment among which may be mentioned: a piston pump, orifice and weir tanks with calibration equipment, apparatus for studying the flow of water in pipes, Pitot tubes, Venturi and other meters, an hydraulic ram, and various other appliances.

A ventilating fan fitted with a motor has proved useful in a number of investigations which are now in progress.

A wind tunnel 4 ft. square is now in position and offers a splendid field for research in aeroplane problems. It is proposed to make this an important part in the research work, in view of the present prominence of the aeroplane.

The boiler room contains the most modern equipment, all of which is available for experimental work.

The laboratories of the department are new, complete, commodious, and well arranged. The equipment covers a wide range of mechanical engineering; it is modern and in excellent condition; and it offers to the student many opportunities for advanced study and research.

ELECTRICAL ENGINEERING.

The province of the Department of Electrical Engineering includes the theory of electricity, magnetism, and allied phenomena, the application to industrial requirements of the generation and transmission of power, the transmission of intelligence, transportation, lighting, etc. During the last two decades there have been enormous developments in the use of electricity, and the next two will see equally important expansion.

With so many and widely differing phases of electrical engineering to draw upon, there is no lack of variety in problems awaiting investigation. It is difficult to outline our facilities without some information on the problem which an investigator may wish to explore; the following references are consequently of a general character only. In so far as can be permitted by limitations of space, staff, and undergraduate requirements, men of graduate standing can be directed and assisted along special or advanced lines of investigation.

In the past, various lines of research have been entered, for example: development work on a new material for solid insulators; design investigations regarding a special type of high-voltage testing transformer; investigation on the basis of rates for the sale of electrical energy; study of true power values as a basis of measurement of electrical energy bought and sold; electro-static phenomena connected with the operation of high-tension magnetos; studies of electrical and gas-electric trucks, and related haulage costs; effect of smoke coatings on insulators on telegraph lines in dry and wet weather; development work on insulating compounds for impregnating transformer windings; the design of indirect lighting fixtures; study of design of current transformers, and apparatus for precision measurement of characteristics.

The ability to make exact electrical measurements is fundamental. Especial attention is directed to the maintenance of exact standards of international values of resistance and voltage as a

basis for establishing any other required units. These basic values are maintained by periodic shipment to the Bureau of Standards, Washington, of a set of about twenty standards. These instruments and a number of Weston laboratory standard meters, and numerous auxiliaries, provide means for most exact measurements in either continuous or alternating current circuits. About 600 other instruments of all kinds, from the best makers only, are available for use in the laboratories. These instruments, assisted by excellent calibrating facilities, enable accurate work to be done during any investigation.

A large variety of direct-current and alternating-current generators and motors are available for studies involving design of machinery, characteristics in operation, or other problems requiring plant for creating test conditions. There is also a varied supply of transformers of different types, converters, reactors, resistors, condensers up to 1,500 microfarads, brakes, torque dynamometers, etc. Automatic Tirrill regulators are employed for holding steady any required conditions during an investigation.

The magnetic and hysteretic properties of iron, steel, and their alloys are important. A variety of equipment is available, both for rapid testing, and for more tedious precision work. In alternating-current work, the material can be put through almost any sort of magnetic cycle, symmetrical or unsymmetrical.

The properties of conducting and dielectric materials can be examined with facility and exactness.

Transformers and all necessary control and measuring appliances are provided for insulation work up to 200,000 volts. Sphere gaps, electrostatic potentiometers, cathode-ray tubes, oscillographs, etc., serve in this connection.

Duplicate sets of standards, from 8 to 200 c.p., are provided for work in photometry: these, together with an accurate photometric plant, enable careful work to be done on lamps of any type. Storage battery supply, automatic regulators, and other facilities can be employed when precise results are desired.

In wireless telegraphy, there is an extensive variety of apparatus mainly adapted to exploring all sorts of schemes for receiving

signals. One antenna is an 8-wire T type, 118 feet long and 100 feet high. Another is a single conductor 900 feet long and 110 feet high. There are numerous relays and amplifiers of vacuum and electromagnetic types, tuning devices, wave-length indicators, loading coils, air and oil condensers, etc. It is possible to take signals from several stations in Germany, from England, from San Francisco, and from the far south. War limitations have prevented much attempt in sending.

For transmission work there is installed a model transmission line adapted to operate at 100 volts, 3-phase, 15 k.v.a., representing a 100,000-volt line 100 miles long. By adjustment of parts, this line can be used to study propagation through slow-speed conductors, submarine cables, etc. Automatic regulators, oscillographs, meters, and all kinds of loading devices, make this equipment valuable in some very difficult lines of work.

The nature of the work renders difficult the listing of problems for future solution. The man who seriously desires to undertake this type of work will almost certainly wish to follow a subject which has attracted him. The experience of the staff in engineering and experimental work, in combination with that of the graduate, should lead to profitable results.

MINING ENGINEERING.

The Department of Mining Engineering has two well equipped laboratories. The Assay Laboratory has coal, coke, gas, oil, and gasoline furnaces of a variety of types and sizes, and an equipment of pyrometers. It has also a variety of apparatus for electrolytic assaying and the necessary equipment for wet analyses. Special apparatus is provided for obtaining accurate samples. Considerable research work has been done in this laboratory in connection with the determining of the extent of error in different methods of assaying, and in the development of apparatus and methods for electrolytic assaying.

The Milling Laboratory contains a full crushing equipment for crushing ore in large or small lots, both wet and dry, including a stamp mill and a tube mill. For ore-dressing there is a large variety of both standard and laboratory apparatus, the equipment for flotation work being well supplied and up to date.

These two laboratories lend themselves to research work in the mechanical or lixiviation treatment of any ores and in the principles underlying the crushing of rock and the treatment of ore by amalgamation, flotation, lixiviation, or by magnetic or electrostatic apparatus, as well as by wet and dry methods based on differences in specific gravity.

METALLURGICAL ENGINEERING.

Canadians, it would seem, make successful metallurgists. They are to be found in Australia, South Africa, Russia, Mexico, and the United States. They are to be found in the metallurgical centres of these countries occupying the highest positions. In the metallurgy of copper particularly, Canadians seem to excel, as from 50 to 75 per cent. of the world's copper is made by them.

Within Canada's own boundaries metallurgical development is assuming considerable proportions. The nickel, copper, cobalt, silver, and gold ores of Ontario offer increasing opportunities for the trained metallurgist.

The Department of Metallurgy in the University of Toronto is equipped with staff and apparatus to train men particularly in that branch of metallurgy which deals with the production of metal from ores, and the refining of the separated metals.

For the metallurgical operation of smelting there are two small water-jacketed blast furnaces, with a capacity each of about 100-lbs. of charge per hour. Air for these furnaces is furnished by a Connersville blower, driven by a variable speed motor. The blower furnishes up to 600 cubic feet of air per minute with a pressure up to 5 lbs. per square inch. For converting there is provided a converter about 18 inches by 18 inches. Small 3-inch retorts have been found successful for the production of spelter from zinc ores.

For the roasting of ores there are several gas-fired muffle furnaces, also a mechanically rabbled, six-hearth Wedge roaster. The hearths are about three feet in diameter. This furnace is connected to a Cottrell treater. The gases from the roaster pass up either of two 12-inch pipes where, under the influence of electric discharges at 50,000 volts, all dust and fume is thrown out.

Considerable attention has been devoted in this laboratory to the hydro-metallurgical treatment of copper ores. The roasted ore is leached with dilute sulphuric acid, and the solution electrolyzed,

using either lead or duriron anodes. A motor-generator set furnishes the current for such work, when the need is greater than the storage battery can supply.

The separation of copper and nickel from copper-nickel mattes has been a subject of investigation in this laboratory. The final products are electrolytic copper, electrolytic nickel, and slimes containing the precious and the rare metals. Copper-nickel steels have been made and tested. The roasted Sudbury ore was smelted in an electric furnace to a pig. The pig was refined in a crucible in a large Hoskin's electric furnace. This same furnace is used when high temperatures are necessary, as in the melting of nickel.

The laboratory is provided with apparatus for working in clay, and with furnaces for burning clay-wares and shapes.

Researches in metallurgy are always interesting and numerous problems are constantly being suggested. Some notes on investigations which might be attempted in our laboratories follow:

A beginning has already been made on a comparison of the flowing temperatures of slags. The determination of the flowing temperatures (not melting points) of typical slags will be of practical interest to the smelting industry.

The roasting of ores as a preparation for leaching has received much attention from metallurgists and still presents a broad field for investigation. The conditions under which the roast is conducted have a great influence upon the solubility of the metal in the resultant calcines.

Leaching methods followed by electrolytic precipitation form a possible method of treatment for many ores besides copper and zinc. Such a method of ore treatment lends itself readily to laboratory investigation. The possibilities of such treatment are well worth investigating for ores of chromium, tungsten, and molybdenum.

In general, one may say that Canada, after the war, may be expected to finish within her own borders the metallurgical treatment of her ores, and there is bound to be an increased opportunity for metallurgists, and a greater likelihood of the adoption of any successful process that may be worked out for the treatment of Canadian ores.

APPLIED CHEMISTRY.

As might be inferred from its name the Department of Applied Chemistry concerns itself chiefly with the application of chemistry to engineering and to the industries. Although much work of a purely theoretical nature is carried out in the laboratories, the end in view is almost invariably the application of the acquired data to the solution of a specific problem. These problems are in general divisible into two classes, in one of which it is desired to improve the conditions under which a chemical reaction or reactions are carried out in order that the efficiency of a manufacturing process may be increased. The second class includes those investigations which aim at the production of a substance by an entirely new method, or indeed, the production of an entirely new substance.

In addition to the facilities for the usual undergraduate instruction, space is available for advanced research work. Such investigators are provided with small laboratories which are furnished with equipment sufficient for all ordinary requirements. Steam, compressed air, and electric current are laid on in each of these rooms.

The laboratories are equipped with all the apparatus and reagents commonly required for chemical investigation, and the services of a glass-blower are available for the construction of special apparatus.

The department maintains an adequate library in the laboratories and the main library of the university is particularly well provided with the transactions of learned societies.

A categorical list of subjects for future investigation would be out of place here. Each member of the staff is interested in certain phases of chemistry in its relation to industry; in consequence, new problems are being encountered continually. The tastes of the investigator are of vital importance: in the past, there has been no difficulty in selecting a problem capable of arousing and sustaining the interest of the student. Not uncommonly the latter has come to the university with a specific subject which has attracted his attention: in such instances, the members of the staff have been able to add their knowledge and experience to that of the student with satisfactory results.

The graduates of this department are for the most part engaged in chemical work connected with the industries of the country, while some have entered the employ of those departments of the

government to which their professional services are peculiarly valuable. Many of these graduates now hold important executive positions, and others have won for themselves a high reputation as consulting chemists.

A large number of researches have been carried out in the laboratories of the department; a partial list of these follows:

Analytical.—The Chemical Composition of the Natural Gases of Ontario; The Direct and Indirect Determination of Oxygen in Organic Compounds; The Estimation of Hydrogen in Gas Mixtures; The Estimation of Titanium; The Loss of Carbon during the Solution of Steel; The Estimation of Arsenic in complex Organic Compounds; The Determination of Manganese in Steel.

Industrial.—Calorific Standards for City Gas; The Regulation of the Action of Water on Calcium Carbide; The Resinification of Rubber; A Study of Fusel Oil; The Purification of Crude Potassium Carbonate; The Manufacture of Ammonium Sulphate using Sulphur Dioxide; Studies on the Destructive Distillation of Wood; Investigation of the Conditions in the Synthesis of several Pharmaceutical Compounds and Dyestuffs; Investigation of the Reactions involved in the Manufacture of Carbolic Acid by the Fusion Process; Investigation of the Sulphonation of Benzol; The Devulcanisation of Rubber; Studies in the Manufacture of Oxalic Acid.

General.—The Action of Calcium Carbide on Acetone; The Decomposition of Vapours of some Substances by the "Isoprene Lamp"; Preparation of some Halogen Derivatives of Organic Compounds; Quantitative Studies of the Gas Reactions of Plants; Study of the Influence of various Volatile Organic Sterilizers on Plant Growth; The Double Salts formed by Sodium and Potassium Carbonates.

The following are some of the problems which members of the staff are about to investigate, or on which they are at present engaged: the prevention of platinum losses in the working of precious metals; the simplification of the separation and recovery of gold, silver, and platinum-iridium; the synthesis of oxalic acid; the double salts of sodium and potassium carbonates; new methods for the estimation of sodium and potassium; investigations on the mechanism of solution; absorption of arsenious acid by ferric hydroxide; mechanism of absorption and catalysis by amorphous precipitates; the mechanism of oxidation; the mechanism of some plant reactions; the investigation of caustic alkali fusions in the manufacture of phenol.

ENGINEERING PHYSICS AND PHOTOGRAPHY.

The laboratories of this department contain the usual apparatus and appliances for the study of light, sound, heat, etc. Instruments designed to illustrate these phenomena in their industrial and technical applications have received especial attention.

In addition to the standard apparatus which requires no further comment, the laboratories are equipped with special appliances, a description of which will serve to indicate the lines along which the activities of the department have been more particularly directed.

For photogrammetry (the obtaining of precise measurements from photographs) is provided a Zeiss field photo-theodolite with horizontal and vertical circles, observing telescope, magnetic needle, etc. The instruments takes plates 9 cm. by 12 cm. and the objective has a rising and falling motion of 30°. There are three tripods, one with shifting head, measuring rod, and other accessories. This equipment is intended for field work in photo-surveying by the stereoscopic method and is self contained, inasmuch as no preliminary triangulation is required, and the working base lines are measured entirely by photographic means. For measurements of the plates taken in the field there is a Zeiss stereo-comparator by which the co-ordinates of any point may be readily obtained. There is also provided a special plotting board which greatly facilitates the transfer of these co-ordinates to the map or survey under consideration. The accuracy obtainable by means of the stereo method of photography is comparable with that of any other method in use, while the time spent in the field is very much less than that required by the ordinary methods. The use of this system is indicated particularly in open country of a mountainous character, where chaining is difficult, and where long base lines are impracticable. Stereo photographs may indeed be made of a totally inaccessible region, provided only that its details are visible. The method may also be employed with advantage in coastal surveys from shipboard in rapid exploratory work and in military operations.

For animated photography there are two motion-picture cameras, one intended for photographing objects in gross and the other adapted for work with the microscope. The latter is driven by motor and is provided with a special device by which the field

under the microscope may be observed while the film is in operation. This equipment provides a means of photographing any action that may take place in the field of a microscope, and of studying such action in detail and at leisure: the applications of work of this kind are obviously very wide. The department also possesses the necessary machinery and facilities for developing and projecting the films, and microscopes designed for use with the camera.

The laboratories also contain a Hilger apparatus for the investigation of photographic lenses, a spectroscopic camera, and cameras for both monochromatic and colour photography.

The study of the acoustics of buildings has received especial attention and much work has been done in the development of this subject. The special apparatus provided for the purpose consists of an electro-pneumatic wind chest and organ pipes together with a chronograph for measuring the rate of decay of reverberation. Such defects in buildings as excessive reverberation, echoes, sound shadows, etc., may be investigated, also the use of deadening material to improve bad conditions in a building, and other problems connected with the subject of architectural acoustics.

SURVEYING, GEODESY, AND PRACTICAL ASTRONOMY.

This department of instruction is fully equipped with all the ordinary field instruments, such as transits, levels, and minor apparatus which are used in engineering practice. The chief use of these instruments is in the instruction of undergraduates in the principles and practice of surveying and field engineering. The scope of such equipment for research work is necessarily rather narrow, but problems occasionally occur which may become subjects for investigation.

The geodetic observatory of the university is provided with all the necessary field instruments and appliances that are used in the precise measurements and observations that are made in the prosecution of a geodetic survey. These comprise: a 10-inch theodolite and a zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8-inch theodolite by Cooke; two electro-chronographs; a Howard astronomical mean time clock, and a Dent sidereal chronometer, each provided with a two-second break-circuit attachment to adapt it for use with a chronograph; a standard yard and metre; a Rogers 10-foot comparator, with the necessary

micrometer microscopes, an invar base measuring apparatus, designed and standardized at the International Bureau of Weights and Measures, Sèvres, France; a Kater's reversible pendulum for gravity experiments; a level trier; a wireless receiving instrument for time signals; etc.

The above equipment is intended primarily for the instruction of students in the principles and practice of geodesy and geodetic astronomy, so as to fit them for positions on a geodetic survey. The object of such a survey is to determine, with the highest possible precision, the relative position of points on the surface of the earth, and also their geographical co-ordinates; the use to be made of this information being to furnish data that may be used either in investigating the form and dimensions of the earth, or as a control of a detailed topographic survey of an extensive portion of its surface. Both purposes may be served simultaneously.

The work of such a survey consists in the selection of the positions of the stations of a triangulation; the measurement of the angles of the triangles; the measurements of base lines; the determination of the elevation of points connected with the triangulation by trigonometric or precise levelling; the determination by astronomical observation of the latitudes and longitudes of certain stations and the azimuths of certain lines of the triangulation; the adjustment of the measured values of the angles so that they may exactly satisfy all geometrical conditions, and the solution of the triangles; the computation of the geodetic latitudes and longitudes of all the remaining stations of the triangulation; and the construction of maps of the country on the projection best suited to its size and form. To this last may be added the determination of the force of gravity at different points by means of the pendulum, so as to provide additional data which may be used in the investigation of the form and interior constitution of the earth; also the observation of the magnetic elements at various points for the study of terrestrial magnetism.

The work of a geodetic survey furnishes many problems requiring solution. New methods of observation and of computation, or modifications of old methods, are continually sought, by which improvements in results may be obtained. It is also a matter of importance to determine the conditions most favourable to accuracy, under which any observation should be taken. The relative precision of two alternative methods may thus be sought,

and a decision made as to which should be used under given conditions, the aim always being to attain to the highest degree of precision with the greatest economy possible of time and labour. The instrumental equipment, in addition to its use in routine field operations, may thus be employed also in important theoretical investigations, which may be made subjects for study by students proceeding to higher degrees.

HOUSEHOLD SCIENCE AND FOOD CHEMISTRY.

In the Household Science Building facilities are offered for undergraduate and graduate work.

The building, which has a frontage of about one hundred and eighty feet, is built with two large wings. On the second and third floors of the building are situated the laboratories, which are equipped for the study of Household Management, of Foods, and of Food Chemistry.

Instruction is given to students in the Faculty of Arts who are taking Household Science courses, to qualified teachers who are preparing to teach Household Science, and to graduate and special students. Graduates from these courses are teaching Household Science, acting as dietitians in military and civilian hospitals, and in other institutions from the Atlantic to the Pacific.

Many problems relating to foods and other important household matters are awaiting solution; therefore, in the planning of this building, provision was made to offer opportunities for original work. Students have been working on such problems as the comparative economic values of home-made and factory-made products, the digestibility and nutrient value of foods as influenced by methods of preparation, and in the Department of Chemistry, on problems of nutrition and food composition.

In the gift to the University, of this building and its equipment, there was included special apparatus suitable for carrying on research work, particularly in nutrition. The late Mrs. Treble, the donor, expressed her sympathy towards research work not only in this way, but by providing an endowment, part of which she designated for purposes of research.

HART HOUSE

THE LIBRARY

PART III.

THE UNIVERSITY LIBRARY.

THE Library of the University is contained in a separate building on the east side of the campus. The situation renders it convenient of access to most of the scientific departments which have buildings of their own, only the Botanical and Forestry building and the Faculty of Education building being further away than a walk of two or three minutes. The books are housed in a fire-proof stack-room of five floors, access to which from the rest of the building is on the uppermost floor of the five. Above the stack-room and included in the fire-proof portion of the building is a large room where the collection of maps and charts is kept, and also large illustrated works of special value relating to art, architecture, and archæology. The portion of the building intended for the accommodation of readers consists, on the main floor of two large reading-rooms, one for men and the other for women students, and a reading-room for members of the faculties, in which are kept the current numbers of the periodicals taken by the Library, disposed by broad subject divisions around the walls of the room to facilitate consultation. On the floor above the large reading-rooms are departmental studies, eight in number, in which the professors hold classes for seminar work and in which, consequently, special collections of books are kept bearing on the work of the departments to which the several studies are assigned. Admission to these studies is on the recommendation of the professors in the departments concerned, and the rooms may be used as reading-rooms by the students thus admitted. In the stack-room portion of the building, on the floor above the stack, there are also ten small individual studies for the private work of graduate students or others engaged in some piece of research which involves constant reference to many volumes at a time, for instance, sources such as parliamentary blue-books or collections of historical documents. The volumes required for consultation are transferred to one of these private studies, which, being immediately above the stack-room, are in the fire-proof part of the building, and a key to the room is given to the temporary tenant who thus can use the books there from day to day, with the same freedom from interruption that he would enjoy in his own house.

The number of volumes belonging to the Library is about 150,000, and there are also about 50,000 unbound pamphlets.

These are not all, however, housed in the stack-room. In the hallway, between the two student reading-rooms, are kept many books of reference, including encyclopædias, atlases and dictionaries, and the more commonly used textbooks. The departmental studies contain select collections of books which seminar classes require. Most of the scientific departments have also special library rooms in which sets of the more useful periodicals in their respective subjects are kept, as well as the recent textbooks and works of reference that students engaged in laboratory work may find it useful to have near at hand. Either in these branch libraries in connection with the scientific laboratories, or in the main library are to be found all the important sets of periodicals in the various European languages that ordinary research work demands. In addition, the valuable library of the Royal Canadian Institute, built up by exchanges with most of the scientific societies of the world during the last sixty years, is available for consultation in the main Library Building, where it has been given shelf accommodation in the stack-room. The resources of the other public libraries of the City of Toronto may also be drawn upon for the research student by special permission. Moreover, by arrangement prevailing among all the great university and other libraries of the North American continent, publications of less well-known scientific societies or other unusual works may be borrowed by the University Library from any library on the continent that happens to possess them, and placed at the disposal of the research student for a limited period. The research student in any subject is thus given great facilities apart from the resources of the University Library itself. These resources are necessarily not equally copious in all subjects, but in most of the literary or historical departments there is ample material for graduate work.

The Librarian is *ex-officio* publisher of "University of Toronto Studies", which consist of papers of a technical character, submitted for publication at the expense of the University and embodying work done in one or another of the University departments or by members of the University. These Studies are therefore a vehicle for the publication of research work done in the University by graduate students. But such publication must be recommended by the head of the department concerned and sanctioned by a special Committee of University of Toronto Studies to which all financial and other details have been entrusted.

THE

CALENDAR

OF THE

University of Toronto

SUMMER SESSION

1920

UNIVERSITY OF TORONTO PRESS

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SUMMER SESSION 1920.

During the Summer Session of 1920 the University of Toronto offers:

(*a*) The Course leading to the Degree of Bachelor of Arts.

(*b*) Courses leading to the Degrees of Bachelor of Pedagogy and Doctor of Pedagogy.

General Information.

Session.

Enrolment with the instructors will begin at 10 a.m., Tuesday, July 6th, and should be completed by 12 o'clock the same day. The work of instruction will begin on the morning of Wednesday, July 7th, and continue through Friday, August 6th.

Registration.

Application for registration should be made on the form in this Calendar and should be forwarded to the Secretary of the Committee on University Extension before June 7th.

Residences.

The University Residences will be open for the accommodation of students during the Summer Session. As rooms are assigned in the order in which applications are received, applications with the deposit fee of $5.00 should be sent as early as possible to Mr. W. Carnie, Superintendent's Office, Main Building.

Library.

Students of the Summer Session will be admitted to the privileges of the University Library.

Excursions and Addresses.

Arrangements will be made to visit a few places of interest under the personal direction of one who is able to give special instruction on the point of interest.

Evening lectures will be arranged during the Session on subjects of general interest.

FACULTY OF ARTS.

Admission.

As entrance qualifications to the Course leading to the degree of Bachelor of Arts, students should present the certificates in their possession. Holders of Faculty Entrance or equivalent certificates are eligible to enter upon the work of the Second Year.

Fees.

TUITION.—One subject $10.00; two subjects $18.00; three subjects $24.00.

EXAMINATIONS—$2.00 each subject.

AD EUNDEM STATUM—

for admission by certificate to the Second Year..... $15.00

For admission ad eundem statum..... 10.00

LABORATORY—For Practical Work in the laboratory, a deposit fee is required at the beginning of the Session to cover breakages. All, or part, of the fee is returned at the close of the term according to the number and value of the breakages.

Examinations.

The examinations will take place at the time of the regular University Examinations in September and May.

FACULTY OF ARTS.

GENERAL COURSE.

First Year.

English, Latin, French, Physics or Biology, Mathematics (Algebra and Geometry), Trigonometry.

Latin, French, Physics and Biology are offered at the Summer Session of 1920. The remaining subjects will be given at the Summer Session 1921.

Second Year.

English, Latin, French, History, Physics, Biology.

English, French and Physics are offered at the Summer Session 1920.

Third Year.

English, Latin, French, Modern History, Ancient History, Political Economy.

English, French and Political Economy are offered at the Summer Session 1920.

Fourth Year.

English, Latin, French, Modern History, Ancient History, Political Economy.

Geology and Mineralogy occur in the course arranged for the Teachers' Classes. This subject and English are offered at the Summer Session 1920.

NEW COURSE.

A new course has been arranged along the lines of the new General Course in Arts as follows:

Second Year: English, History, Science (Botany), Psychology, French or Political Economy.

Third Year: English, History, Science (Zoology), Psychology, French or Political Economy.

Fourth Year: English, History, Science (Geology and Mineralogy), Psychology, French or Political Economy.

This course will be entered upon in the Fall of 1920.

REGULATIONS.

The Degree in Arts may be obtained by following the Course, subject to the following regulations:

1. The work of the First Year will ordinarily be taken in the Courses for admission to the Faculties of Education conducted by the Department of Education. The Second, Third, and Fourth Years will be taken under the Faculty of Arts.

2. A candidate holding a certificate of Entrance into the Faculties of Education or an equivalent certificate, may enter the Second Year, provided he has credit for not less than five of the six subjects of the First Year.

3. Two years will be required in order to complete the work of the Second Year and such work will involve (a) supervision during two regular sessions, and (b) attendance at two Summer Sessions.

4. The work of the Third and Fourth Years under this plan will require at least three additional years in which attendance for two Summer Sessions is necessary.

5. Instead of completing his course under this plan a candidate proceeding to the degree is advised to attend the regular courses of instruction in the Fourth Year, in which case the fourth Summer Session is not compulsory.

6. A candidate will not be allowed to present himself for examination in any subject until he has attended one Summer Session and has had supervision of his work during one academic year.

7. A candidate proceeding to the degree shall, on or before **the first of October of each year,** submit a statement of the work which he proposes to take under supervision during the regular session.

8. A candidate will receive credit for each subject in which he secures the minimum percentage required for pass standing.

9. A candidate will not receive credit for a subject of a higher year until he has passed the examination of the lower year in the same subject. He may, however, be a candidate for examination in the work of two successive years in the same subject.

COURSES OF INSTRUCTION.

FACULTY OF ARTS.

First Year.

The subjects of the First Year, viz., Latin, French and Physics or Biology, may be taken in the Faculty of Education Building, Bloor Street, in the Faculty Entrance Courses provided by the Department of Education. For further particulars consult the Summer Session Syllabus of the Department of Education.

SECOND YEAR.

ENGLISH.

CHARLES EARL AUGER, B.A., TOR.
Associate Professor of English.

WILLIAM HALL CLAWSON, B.A., NEW BRUNSWICK, M.A., PH.D., HARVARD,
Assistant Professor of English.

Composition: The writing of original compositions connected with the course in literature.

Shakespeare, Romeo and Juliet, Henry IV., Parts I. and II., Twelfth Night, Hamlet.

FRENCH.

HERBERT SUTHERLAND MCKELLAR, B.A., TOR.
Lecturer in French.

Grammar: Dictation; translation from English into French; translation at sight from modern French. The following texts are prescribed for critical study: Barrès; Colette Baudoche; Pailleron: Le monde où l'on s'ennuie; Coppée: Pour la couronne; (Selections from) French Short Stories (ed. Buffum), or Georges Duruy: Histoire sommaire de la France, classe de septième.

PHYSICS.

JOHN SATTERLY, M.A., CANTAB., D.SC., LOND.,
Assistant Professor of Physics and Assistant Director of Undergraduate Laboratory Work.

A course of lectures and laboratory work for second year pass students. This course includes Properties of Matter, Mechanics, Hydrostatics, and Heat. The lectures will deal with simple measurements, energy, gravitation and the pendulum, the general properties of solids, liquids and gases such as elasticity, viscosity and capillarity, the determination of fluid pressures, specific gravity and the theory and use of common forms of pumps, barometers, etc.; the thermal characteristics of various substances, including expansion, various thermometers, specific and latent heat and calorimetry; the phenomena observable during the change of state of substances from one form to the other; conduction, radiation, heat and energy, the first and second laws of thermodynamics, engines; the liquefaction of gases and liquid air, the kinetic theory of matter.

THIRD YEAR.

ENGLISH.

CHARLES EARL AUGER, B.A., TOR.
Associate Professor of English.

The writing of essays on subjects connected with the Third Year course in literature.

Transition and earlier nineteenth-century literature: The selections from Cowper to Byron inclusive in "Representative Poetry" (second edition); Burke, French Revolution; Scott, Marmion (with introductory epistles); the essays by Wordsworth, Coleridge, Lamb and Hazlitt in "English Critical Essays of the Nineteenth Century" (World's Classics); Jane Austen, Pride and Prejudice; Lamb, Poor Relations, Detached Thoughts on Books and Reading, Christ's Hospital; Newman, Idea of a University (Knowledge its own end, and Knowledge in relation to learning); Carlyle, Signs of the Times, Characteristics.

FRENCH.

HERBERT SUTHERLAND MCKELLAR, B.A., TOR.
Lecturer in French.

Standards of the classical age and the main ideas of the eighteenth century, studied in French literature from Malherbe to the philosophes. Pellissier: Précis de l'histoire de la littérature française, pp. 139-364; (Selections from) French Prose of the XVIIth Century (ed. Warren); Corneille: Le Cid; Molière: Le Misanthrope; Racine: Athalie; La Fontaine: Fables (Selections); (Selections from) Voltaire's Prose (ed. Cohn and Woodward); Supplementary reading. Translation from English into French; translation at sight from modern French.

POLITICAL ECONOMY.

GILBERT E. JACKSON, B.A., CANTAB.,
Assistant Professor of Economics.

Elements of Economic Theory. A review of economic principles with special reference to problems of distribution. Books recommended: Clay, Economics, for the General Reader; Seligman, Principals of Economics; Taussig, Principals of Economics; Carver, Distribution of Wealth; Smart, Distribution of Income.

It is expected that students taking this course will already have made themselves familiar with Clay, Economics for the General Reader; Hobson, Evolution of Modern Capitalists; Layton, An Introduction to the Study of Prices.

FOURTH YEAR.

ENGLISH.

WILLIAM HALL CLAWSON, B.A., NEW BRUNSWICK, M.A., PH.D., HARVARD,
Assistant Professor of English.

The writing of essays on subjects connected with the Fourth Year course in literature.

Later nineteenth-century literature: Selections from Byron to Morris in "Representative Poetry" (second edition); essays by Shelley, Arnold, Ruskin, Mill and Bagehot in "English Critical Essays of the Nineteenth Century" (World's Classics); Carlyle, Sartor Resartus (Books I. and II.); Dickens, Great Expectations; Ruskin, A Joy Forever; Arnold, The Function of Criticism, The Literary Influence of Academies.

GEOLOGY AND MINERALOGY.

THOMAS LEONARD WALKER, M.A., QUEEN'S, PH.D., LEIPZIG,
Professor of Mineralogy.

WILLIAM ARTHUR PARKS, PH.D., TOR. Professor of Palaeontology.

The course for the Summer Session of 1920 is open only to those who have already accomplished the work of the introductory course, Geology 2a and 2b.

Physical Mineralogy: Thirty hours lectures and laboratory work on the physical properties of crystals. Books of reference: Dana, Text-Book of Mineralogy; Walker, Crystallography.

Geology and Palaeontology of the Province of Ontario: Sixty hours lectures and laboratory work. Books of reference: Scott, An Introduction to Geology; Young and Brock, Geology and Economic Minerals of Canada (Published by the Geological Survey of Canada).

TIME TABLE—Second Year.

8- 9—French.....Room 22, Main Building.
9-10—English.....Historical Study, Main Building.
10- 1—Physics.....Lecture Room 43 and Laboratory, Physics Building.

Third Year.

8- 9—English.....Historical Study, Main Building.
9-10—French.....Room 22, Main Building.
10-11—.....
11-12—Political Economy.....Historical Study, Main Building.

Fourth Year.

9-10—English.....40A. Main Building.
10- 1—Geology and Mineralogy..Lecture Room and Laboratory, Mining Building.

FACULTY OF EDUCATION.

Regulations and Registration.

Information regarding registration, courses of study and examinations in Pedagogy is to be found on pp. 68-73 of the calendar of the Faculty of Education for 1919-20.

The tuition fee for the Summer Session is $10. The first lecture of the Summer Session will be given at 9 a.m. on Tuesday, July 6th, in the Faculty of Education Building, cor. Bloor and Spadina.

Courses in Pedagogy.

Comparative Education and Educational Administration.

W. PAKENHAM, B.A., TOR., Dean of the Faculty of Education.

The work on the above subject will consist of lectures and discussions bearing upon Educational Administration in Ontario, the United States, England, France and Germany.

Educational Psychology.

PETER SANDIFORD, M.SC., MANC., PH.D., COLUMBIA,
Associate Professor of Education.

The topics to be discussed include: the Original Nature of Man, the Process of Learning, Practice, Fatigue, Intelligence, its Nature and Measurement, Educational Tests and Measurements.

THE CALENDAR OF THE

Ontario Veterinary College

Session 1919-1920

Under the
Department of Agriculture of Ontario
and affiliated with the
University of Toronto

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110 UNIVERSITY AVENUE, TORONTO, CANADA

Calendar 1919-1920

ONTARIO
Veterinary College

110 UNIVERSITY AVENUE, TORONTO, CANADA

Under the Department of Agriculture of Ontario

and

Affiliated with the University of Toronto

Established by the late Professor Andrew Smith, F.R.C.V.S., in 1862,
and acquired by the Government of Ontario during 1908

Session will commence Wednesday the First of October, 1919

HON. GEORGE S. HENRY,
Minister of Agriculture

E. A. A. GRANGE, V.S., M.Sc.
Principal Emeritus

C. D. McGILVRAY, V.S., M.D.V.
Principal

College Almanac

1919

October 1—Session begins—Registration of Students—Entrance examinations commencing at 9 a.m.
October 3—Lectures and class work begin.
October 15—Supplemental examinations.
December 24—Christmas vacation commences.

1920

January 2—Christmas vacation ends—Lectures and class work resumed.
April 28—Examinations completed and results announced.
April 29—Graduating exercises.

ONTARIO VETERINARY COLLEGE

INTRODUCTION

In recognition of the need for skilled Veterinarians, the Ontario Department of Agriculture maintains the Ontario Veterinary College, at Toronto, for the purpose of training young men for the veterinary profession. The College is affiliated with the University of Toronto, and is one of the oldest and best known on the American continent. It has received students from all parts of the English-speaking world and its graduates are favourably regarded, many of whom have attained considerable prominence. The College building is new and modern throughout, with the best of facilities and equipment for scientific instruction. The purpose of the College is essentially that of a teaching institution for the proper training of students for a Degree in Veterinary Science, thus enabling its graduates to practise their profession. The prescribed course consists of four college sessions of seven months each and leads to the Degree of Bachelor of Veterinary Science (B.V.Sc.), which is granted by the University of Toronto.

COLLEGE STAFF AND SUBJECTS TAUGHT

1918-1919

E. A. A. Grange, V.S., M.Sc.: Veterinary Hygiene.

C. D. McGilvray, V.S., M.D.V.: Contagious Diseases, Special Therapeutics.

J. N. Pringle, M.R.C.V.S., B.V.Sc.: Sporadic Diseases, Obstetrics, Dentistry.

C. G. Saunders, V.S., B.V.Sc.

D. R. Caley, V.S.: Surgery, Surgical Therapeutics, Restraint.

J. A. Campbell, V.S.: Canine and Feline Diseases.

H. D. Nelson, V.S., D.V.Sc.: Anatomy, Veterinary Physiology.

J. A. Amyot, M.B.: Bacteriology.

J. A. Allen, V.S., B.V.Sc.: Bacteriology, Milk Hygiene.

H. E. Batt, V.S.: Histology, Laboratory Pathology.

A. C. Walker, V.S., B.V.Sc.: Meat Inspection.

D. King Smith, M.B., V.S.

E. A. McCulloch, B.A., M.B.: Pathology, Parasitology.

L. T. Addison, B.A., M.D.: Zoology, Embryology, Histology.

Paul L. Scott, M.B.: Pharmacy.

C. A. Temple, M.D., C.M.: Materia Medica.

F. D. Shaver, B.S.A.: Animal Husbandry.

Professor J. J. R. MacLeod, University of Toronto: Physiology.

Professor T. B. Robertson, University of Toronto: Biochemistry.

Professor R. B. Thomson, University of Toronto: Botany.

Professor E. F. Burton, University of Toronto: Physics.

Professor F. B. Allan, University of Toronto: Chemistry.

Dyce W. Saunders, K.C.: Jurisprudence.

S. A. Cudmore, B.A. (Oxon.): Economics.

F. H. Kirkpatrick, Ph.D.: Public Speaking.

ANNOUNCEMENTS

This calendar is intended for the current session, and the College reserves the right to make changes from time to time at its discretion.

The College session will commence on Wednesday the first of October, 1919, and will extend to the first of May, 1920.

Those desirous of attending are required to report at the College, on the first of October, for registration, either by certificate or examination.

Applicants may be accepted for admission to the course without examination if they furnish a satisfactory certificate at least two years' high school education, otherwise they will require to pass a qualifying entrance examination in accordance with the regulations of accredited Veterinary Colleges.

Applicants desirous of entering by certificate should submit their credentials to the College for approval at as early a date as possible, and not later than the month of September.

Those not in possession of an approved certificate have the opportunity of taking the qualifying entrance examination which will be held at a stated time and at a central place in each of the different Provinces and at the College, as mentioned in the calendar.

The requirements for admission as to the form of certificates recognized and the subjects of the entrance examinations are stipulated hereafter in the calendar, under the heading Matriculation of the University of Toronto for the Degree of Bachelor of Veterinary Science.

Students are not accepted unless they are over the age of sixteen.

ENTRANCE EXAMINATIONS

The qualifying entrance examinations will be held at the following places, commencing at 9 o'clock a.m., on Wednesday, September 3rd, 1919, and finishing the following day:

Charlottetown, P.E.I., at Prince of Wales College.

Halifax, N.S., at Dalhousie University, M. Macneill, Registrar.

Fredericton, N.B., at University of New Brunswick, C. C. Jones, Chancellor.

Montreal, Que., at McGill University, J. A. Nicholson, Registrar.

Toronto, Ont., at Ontario Veterinary College, 110 University Avenue.

Winnipeg, Man., at University of Manitoba. W. J. Spence, Registrar.

Regina, Sask., at Department of Education, Parliament Buildings. D. P. McColl, Superintendent of Education.

Saskatoon, Sask., at University of Saskatchewan. President, W. C. Murray.

Edmonton, Alta., at University of Alberta. C. E. Race, Registrar.

Calgary, Alta., at Department of Education. A. M. Scott, Superintendent of Schools.

Vancouver, B.C., at University of British Columbia. Thos. Pattison, Registrar.

Victoria, B.C., at Department of Education, W. H. M. May, Inspector of Schools.

Also at the Ontario Veterinary College, Toronto, on Wednesday, October 1st, 1919, commencing at 9 o'clock a.m.

COLLEGE FEES

(Subject to change)

The tuition fees are $85.00 for each year of the course, payable each session at the time of registration and not later than the thirty-first of October.

A fee of $5.00 will be charged for supplemental examinations.

UNIVERSITY FEES

(Subject to change)

A deposit fee of $5.00 may be assessed students by the University to guard against breakages and waste in their laboratories. Members of the graduating class will require to pay a fee of $10.00 for examinations and the degree of Bachelor of Veterinary Science (B.V.Sc.). This fee is to be paid to the Registrar of the University before writing the final examinations.

LIVING EXPENSES

Students do not board or room in the College. Board and room may be procured for $7.00 per week and upwards, depending on the class of accommodation desired. A list of approved places for room and board is obtainable from the Students' Y.M.C.A., and newcomers should avail themselves of this service to obtain suitable accommodation at reasonable prices.

UNIVERSITY OF TORONTO

CURRICULUM

DEGREE OF BACHELOR OF VETERINARY SCIENCE

(B. V. Sc.)

The course leading to the Degree of Bachelor of Veterinary Science (B.V.Sc.), shall, on and after the first of November, 1916, extend over a period of four academic years, of not less than seven months each.

The three years' course for the Degree of Bachelor of Veterinary Science is provided only for those who registered as candidates for the Degree prior to the first of November, 1916.

MATRICULATION

Candidates for admission to the Course in Veterinary Science must submit either:

1. A certificate of admission to the middle school, i.e., have completed successfully two years in a high school or collegiate institute of Ontario;

2. A normal entrance or junior matriculation certificate of Ontario;

3. A certificate, equivalent in standard, of any Province of Canada, of any part of the British Empire or of the United States;

4. Certificates other than those mentioned will be considered by the Senate in determining the status of applicants as undergraduates;

5. A certificate of having passed a special entrance examination in English Grammar and Composition, Spelling and Dictation, Reading, English Literature, British and Canadian History and Geography, Arithmetic.

This examination may be held annually on the first Wednesday and Thursday of September at Charlottetown, Halifax, Fredericton, Montreal, Toronto, Winnipeg, Regina, Saskatoon, Edmonton, Calgary, Vancouver, Victoria and such other centres as may be approved from time to time by the Senate.

CURRICULUM

Candidates for the Degree shall ordinarily complete the courses of instruction and examinations of the first, second and third years at the Ontario Veterinary College.

Candidates may be admitted from a recognized Veterinary College on conditions to be determined in each case by the Senate.

The subjects of examination at the close of the fourth year are as follows:

Veterinary Medicine and Surgery.

Infectious and Contagious Diseases of Animals.

Obstetrics and Hygiene of Breeding Animals.

Animal Husbandry.

Veterinary Materia Medica and Therapeutics.

Pathology.

Bacteriology.

Meat and Milk Hygiene.

Jurisprudence and Veterinary Sanitary Service Laws.

Examinations at the end of the fourth year shall be conducted by examiners appointed by and under regulations approved by the Senate.

The standard of passing shall be fifty per cent. in each subject with an average of sixty per cent. of the total number of marks assigned to the subjects.

The first-class honour standard is seventy-five per cent. and the second class sixty per cent.

Any student failing in not more than three of the above subjects may take supplementary examinations in these subjects, and upon passing the same shall be entitled to receive the Degree.

Upon the successful passing of the examinations in the above subjects, the students shall be entitled to receive the Degree of Bachelor of Veterinary Science (B.V.Sc.).

DOCTOR OF VETERINARY SCIENCE

A graduate holding the Degree of Bachelor of Veterinary Science, desiring to proceed to the Degree of Doctor of Veterinary Science, shall, by the first of January apply to the Senate for permission to undertake special research in a scientific laboratory or in some designated field of work allied to the live stock industry, and upon permission being obtained he shall carry on special research and present a thesis on or before the first of May, and upon the said thesis being approved by the Senate, the Degree of Doctor of Veterinary Science shall be conferred upon the said graduate, but only after the expiration of twelve months from the time of conferring the Degree of Bachelor of Veterinary Science.

FEES

(Subject to change)

The fee for the Degree of B.V.Sc. shall be $10, which shall be paid before writing on the final examination for the said Degree; and the fee for the Degree of D.V.Sc. shall be $15, which shall be paid on presentation of the thesis for the said Degree.

SCHEDULE OF THE COURSE OF STUDY

The prescribed course of study consists of four yearly sessions of seven months each, with each session beginning the first week in October and ending the last week in April.

The following time tables indicate the number of hours instruction in the course for each year.

FIRST YEAR
(Subject to change)

Subject	Lectures and Recitations	Laboratory
Anatomy	100 hours	100 hours.
Zoology	20 "	40 "
Embryology	10 "	20 "
Histology	20 "	50 "
Pharmacy	25 "	50 "
Botany	16 "	20 "
Chemistry	50 "	100 "
Physics	50 "	50 "
Animal Husbandry	20 "	10 "
Economics	75 "	.....

SECOND YEAR
(Subject to change)

Subject	Lectures and Recitations	Laboratory
Anatomy	50 hours	275 hours
Histology	25 "	75 "
Physiology	25 "	.....
Materia Medica	30 "	.....
Pathology	50 "	.....
Bacteriology	25 "	.....
Sporadic Diseases	50 "	75 "
Dentistry	10 "	10 "
Surgery	50 "	75 "
Botany	16 "	20 "
Chemistry	25 "	25 "
Biochemistry	50 "	.....
Animal Husbandry	20 "	10 "
Economics	25 "	.....

THIRD YEAR
(Subject to change)

Subjects	Lectures and Recitations	Laboratory
Sporadic Diseases	50 hours	150 hours
Surgery	50 "	150 "
Obstetrics	40 "	10 "
Infective Diseases	50 "	.....
Materia Medica	50 "	.....
Pathology	25 "	75 "
Bacteriology	50 "	100 "
Physiology	50 "	25 "
Milk Hygiene	25 "	10 "
Canine Diseases	20 "	30 "
Parasitology	20 "	10 "
Animal Husbandry	25 "	25 "

FOURTH YEAR
(Subject to change)

Subject	Lectures and Recitations	Laboratory
Sporadic Diseases	75 hours	150 hours
Diagnostics	25 "	50 "
Surgery	75 "	200 "
Infective Diseases	50 "	.....
Special Therapeutics	25 "	.....
Hygiene	10 "	10 "
Bacteriology	25 "	100 "
Meat Inspection	25 "	50 "
Pathology	25 "	50 "
Obstetrics	40 "	10 "
Lameness and Shoeing	10 "	10 "
Animal Husbandry	25 "	25 "
Jurisprudence	10 "	.....
Public Speaking	50 "	.....

SUBJECTS OF INSTRUCTION

The Subjects of Instruction are outlined under the following headings:

ZOOLOGY

The instruction in this subject consists of two parts.

The first is a course of thirty lecture periods of one hour each, illustrated by lantern slides, models, skeletons and prepared animals.

The second is a laboratory course of forty hours, comprising the gross dissection of small animals and the use of the microscope in the study of parasites.

EMBRYOLOGY

First Year:—This course follows immediately after the course in Zoology and consists of sixteen hours microscopic study of cell division and of the development of the stages of the holoblastic blastula and gastrula.

Second Year:—A course of illustrated lectures on the development of the fœtal membranes and other structures of the meroblastic embryo.

HISTOLOGY

First Year:—This course immediately follows the first year Embryology and consists of twenty lecture periods of one hour each in which the tissues are taught. The didactic lectures are supplemented by a laboratory course of fifty hours in which the tissues and certain structures are demonstrated.

Second Year:—This course consists of one hundred hours in mixed didactic lectures and demonstrations in the laboratory and comprises a study of structures of the body not already taken up in the first year.

COMPARATIVE ANATOMY

The course of instruction extends over three years. The study embraces osteology, arthrology, myology, splanchnology, angiology, neurology, ethesiology and topography.

Comparisons are made and deviations described where they exist in the various regions and organs of domestic animals.

Instruction is conducted daily by lectures, recitations and quizzes, supplemented by extended laboratory demonstrations and dissection periods.

Advanced work in regional anatomy is given to senior students, emphasizing the structures encountered in practical veterinary surgery.

PHYSICS

The course in physics is intended for those who have had no previous training in this science. It consists of two lectures and two hours laboratory per week throughout the whole year. After a preliminary treatment of methods of measurement and calculation, the work will deal with the general principles developed in mechanics leading up to simple machines. There will then follow lecture and laboratory work on the particular divisions of physics, viz.: properties of matter, hydrostatics, heat, light, sound, electricity and magnetism. The special needs of the veterinary student will be kept in mind in this work.

CHEMISTRY

The course in chemistry is given to the first year and second year students and consists of eight hours' lecture and laboratory instruction each week. It will include a discussion of the general principles of the subject illustrated by reference to some of the better known elements and compounds. Also a study of the more important classes of organic compounds which is designed as a preparation for the courses in biochemistry and physiology. The lectures will be supplemented by laboratory work and there will also be special laboratory instruction to accompany the course in biochemistry for second year students.

BIOCHEMISTRY

The course may be considered as consisting of six parts, corresponding with the various phases of the cycle of changes which the foodstuffs undergo. These divisions of the course are the following:

1. The foods; their properties, assimilation, and conversion into living matter or into reserve materials. The consideration of this phase of the subject takes the student to the point at which the foods have really become living matter or reserve materials.

This leads to the second part of the subject, namely:

2. The manner in which the physical and chemical properties of the foods determine the properties of living protoplasm.

3. The correlation of the different activities of the tissues in so far as this is brought about by chemical agents which are distributed through the agency of the circulation.

4. The chemical phenomena which accompany or underlie the performance of function by living tissues.

5. The waste products, their chemical nature, their derivation and, to some extent, the method of excretion.

6. Regarding the entire body as a chemical machine, the efficiency of this machine is discussed and the relationship between the work it can perform and the nature of the fuel with which it is supplied.

PHYSIOLOGY

1. Lecture Course:—A course of lectures bearing on the functions of the cells and tissues in general (general physiology), followed by a description of the functions of the various organs and tissues of the higher mammals. Emphasis is placed on the comparative physiology of the domestic animals, in its relationship to veterinary science. The relationship of the ductless glands to the well-being of farm animals is emphasized.

2. Practical Course:—Experiments demonstrating the physiological properties of muscular contractions. Circulation of the blood, properties of the blood, respiration, reflex action. These experiments are followed by demonstrations to illustrate physiological properties which the student is unable by individual experiment to demonstrate for himself.

PHARMACY

Instruction in pharmacy is given in the first year and consists of three hours' lectures and laboratory exercises each week.

Lecture Course:—The subjects taken up in the lectures include weights and measures, the metric system, the pharmacopeia and its preparations, prescription writing, incompatibility, etc.

Laboratory Course:—The exercises in the laboratory are designed to make the student practically familiar with various pharmaceutical processes and preparations and to give him a working knowledge of the dispensing of veterinary prescriptions.

BOTANY

First Year:—A general course on the principles of botany, illustrated as far as possible from food and fodder plants and other economic forms; also elementary work on the classification of plants sufficient to enable the student to identify poisonous plants.

Between the first and second years, students are required to make a collection of twenty-five plants, as many of these as possible to be poisonous plants.

Second Year:—This collection and those in the Department to form the basis for a study of the poisonous plants of Canada and the United States. A short special course will also be given on the identification of injurious weed seeds in feeding stuffs.

MATERIA MEDICA AND THERAPEUTICS

The course of instruction in materia medica and therapeutics will consist of lectures supplemented by laboratory practice.

An introductory course will be given second year students leading up to advanced courses for third and fourth year students. The lectures will deal with the sources, preparations, actions, uses, doses and administration of drugs and other therapeutic agents used to relieve pain and treat disease.

The laboratory practice will be given in the pharmacy and hospital of the college so as to afford practical application of the administration of drugs and therapeutic agents and their effects on animals.

CLINICAL DIAGNOSTICS

This is essentially a course of training in the art of examining animals for disease and prescribing treatment.

The training is commenced in the first year and continued throughout each term until graduation. Descriptive lectures are given on selected cases supplemented by demonstrations as to the proper methods of examining horses for sickness and to determine unsoundness so that the student may be able to arrive at a correct diagnosis and extend reasonably scientific treatment. Students of the third and fourth years are required to examine patients and make detailed reports as to the nature of the disease, causes, symptoms and treatment.

SPORADIC DISEASES OF HORSES, CATTLE, SHEEP AND SWINE

The instruction given in this course includes a description of the etiology, morbid anatomy, symptomatology, therapeutics, and a part of the pathology of all diseases of all the organs, external and internal, of the animal body, which are classed as non-transmissible from one animal to another, including some diseases of the blood, and a number of diseases of which the pathology and classification is as yet unknown.

Each disease is fully discussed, and as far as possible demonstrated in a practical manner in the clinic room.

SPECIAL THERAPEUTICS

This consists of a course of twenty-five lectures on diseases of live stock and for which special remedies such as vaccines and serums may be employed for their prevention and treatment. In the teaching of this subject reference is made to the most recent advances in veterinary biologics and materia medica.

INFECTIOUS AND CONTAGIOUS DISEASES OF ANIMALS

To the third and fourth year students a course of fifty lectures on infectious and contagious diseases of animals is given in keeping with the most recent advances in veterinary sanitary science. The various diseases are dealt with as exhaustively as possible and particular consideration is devoted to their nature, prevalence, causes, dissemination, symptoms, methods of diagnosis by the various approved tests and the best measures for their prevention and suppression. Special attention is likewise given to the sanitary service laws and regulations relating to contagious diseases, together with those governing the importation and exportation of live stock.

The lectures are illustrated by means of lantern slides showing animals affected with the different diseases.

SURGERY

The course in surgery is conducted by a series of daily lectures, recitations and practical instruction in the principles of general surgery, including animal restraint, anæsthesia, surgical pathology and surgical therapeutics, including

asepsis, antisepsis, hemostasis, suturing, dressing and bandaging. General and special operative technique is demonstrated by surgical operations, both minor and major, on domestic animals in the infirmary of the college.

Students are required to assist at operations and are assigned to attend to patients and furnish reports on the progress of each case.

LAMENESS AND SHOEING

Instruction is imparted by lectures and practical demonstrations. Special attention is given to the differential diagnosis of lameness and to the principles of horseshoeing.

VETERINARY OR ANIMAL DENTISTRY

This course embraces all diseases and irregularities of the teeth of the domestic animals, as well as diseases and injuries of the mouth and bones of the jaws.

The method of instruction in this subject is similar to that of sporadic diseases, assisted very much by numerous specimens in the college museum.

CANINE AND FELINE PRACTICE

This consists of a special course of thirty lectures and laboratory practice dealing with dogs, their breeds and breeding, bench judging, kennel management and hygiene, principles and practice of canine and feline medicine and surgery.

OBSTETRICS AND HYGIENE OF BREEDING ANIMALS

The essentials of these subjects are taught by special lectures and demonstrations dealing with breeding animals and their young. The course of study includes the process of generation and reproduction, gestation, the care and management of pregnant animals, parturition, diseases and accidents incidental to the pregnant state and following parturition.

Special consideration is given to diseases of young animals and means of lessening mortality among them. The lectures are illustrated by the use of lantern slides and models.

ANIMAL HUSBANDRY

1. Types and Breeds of Farm Animals:

Covering a study of the classification of the breeds, with a brief outline of their histories and characteristics.

2. Principles of Breeding:

Embracing a discussion of all laws and theories relating to breeding in so far as they affect live stock.

3. Feeds and Feeding:

A consideration and study of the mechanical nature and chemical composition of feeds and feeding stuffs, their digestibility, the food requirements of the bodies of the different animals at rest and at work, and the scientific and practical administration of available feeds to meet these requirements.

4. Live Stock Judging:

A practical course conducted at the stables of horsemen in the city and on the farms of near-by stock breeders.

VETERINARY HYGIENE

A special course of twenty lectures is given in such subjects as the hygienic care and management of animals in health or disease, ventilation, drainage and disinfection. The sanitation of water and its relation to the various farm products are fully discussed.

Special consideration is given to dietetics, embracing wholesome and unwholesome foods, external agents causing disease, and kindred subjects.

MILK HYGIENE

A course of thirty lectures, supplemented by laboratory work, is given in general milk control. The chemistry of normal milk, the common methods of analysis for butter fat, total solids, etc.; as well as the tests for the more important adulterants of milk, are discussed in detail. Special attention is given to the sanitary control of municipal milk supplies, and the relationship of the diseases of animals to the public health is emphasized. Instruction is given in essential branches of successful dairying, including the care and management of dairy cattle, the sanitary construction and equipment of dairy barns and milk houses and the proper care of milk and utensils.

PATHOLOGY

The course in pathology consists of four lecture periods and four hours' laboratory instruction each week.

Lecture Course:—The lectures in the second year are on general pathology and are devoted to the study of inflammation, healing of wounds, fractures, atrophy, hypertrophy, infiltration, degeneration, necrosis, gangrene, new growths, including benign and malignant tumours and cysts. The third year lectures embrace special pathology in which the organic diseases of the body are discussed as well as diseases of an infectious and contagious nature.

The lectures are illustrated by means of lantern slides and specimens.

Laboratory Pathology:—A laboratory course is given in general microscopic pathology in which the pathological conditions in diseases of animals are fully illustrated. Gross specimens are collected by the student himself in the large abattoirs, and are brought to the laboratory for microscopic diagnosis. The senior students are required to attend all post-mortem examinations held in the college, and to collect material for futher study.

BACTERIOLOGY

An introductory course in bacteriology is given to the second year students in which the general importance of bacteria in nature is discussed. To the third and fourth year students, a graduated course in general bacteriology is given, dealing especially with the bacteriological control of communicable diseases of animals. The problems of immunity, laboratory diagnostic methods, and the preparation of biological products are fully described in lectures, supplemented by an extensive laboratory course.

PARASITOLOGY

The course in parasitology consists of two lectures each week on the classification, identification and life history of the common parasites affecting domestic animals.

In the general outline the mosquitoes, flies, fleas, lice, mange mites, warbles and ticks are dealt with, and also internal parasites, including the various species of round worms, tape worms, flukes and parasitic protozoa. Special attention is given to the prevention and treatment of parasitic diseases and infestations likely to cause unthriftiness, impairment of health and fatalities among farm animals.

The lectures are illustrated as far as possible by the use of lantern slides and mounted specimens.

MEAT INSPECTION

The course in meat inspection includes one lecture period supplemented by three hours' practical application each week, on the diseases of food animals, the examination of carcasses for food, the disposition of affected carcasses, the regulations governing the importation and exportation of meats and meat food products in accordance with the requirements of federal and municipal food laws.

Weekly visits are made to packing houses and abattoirs under government supervision for special training as to methods of ante-mortem examination, post-mortem technique, meat curing and processing, manufacture of lard and oleomargarine. The proper hygienic methods to be observed in the preparation, handling and storing of meats and meat food products are fully considered.

VETERINARY ECONOMICS

The course in veterinary economics consists of seventy-five hours of lectures in the first and twenty-five in the second year. It includes a description and explanation of the economic structure of modern society, and of the production, exchange, distribution and consumption of wealth, with special reference to the importance of the live stock industry and the veterinary profession in our economic organization. The object is to enable the veter-

inary surgeons of the future more adequately to realize and perform the services and to render the leadership which the community expects of them. In the second year special attention is devoted to the economic functions of government, especially as exemplified in the work of the State-employed veterinarian.

PUBLIC SPEAKING

The course in public speaking is two-fold in its object. It aims to enable students properly and effectively to organize their thoughts, and to deliver their ideas simply, naturally, and clearly. Attention is given to the correction of grammatical and rhetorical errors and also to faults in enunciation and articulation. The course is both useful and cultural. Its ultimate aim is so to equip graduates that they may more adequately take their proper places of influence in the communities in which they may be situated.

JURISPRUDENCE

The course in jurisprudence consists of a series of special lectures to senior students on matters of law concerning which the veterinary surgeon and live stock owners are interested, such as railway transportation regulations, herd laws, animal insurance, live stock contracts relating to the sale, purchase and warranty of animals.

Consideration is also given to federal acts and regulations relating to diseases of animals and to the importation and exportation of animals and their products.

SPECIAL LECTURES

In addition to the regular lectures of the college arrangements will be made whereby prominent men will address the students or conduct demonstrations on topics relating to veterinary science or of special interest to the profession.

TEXT AND REFERENCE BOOKS

Anatomy—Sisson, Strangeway, McFadyean, Chauveau.

Physiology—F. Smith, Haliburton, Ashby, Starling.

Chemistry—Attfield, Roscoe, Benson, Kendrick and DeLury.

Materia Medica and Therapeutics—Hoare, Winslow, Quitman, Finlay Dun.

Pharmacy—British and United States Pharmacopœia's, National Dispensatory, Heebner's Manual of Pharmacy, Remington's Practice of Pharmacy.

Veterinary Medicine—Hutyra and Marek, Hoare, Friedberger and Frohner, Law, Williams, Courtenay, Cadiot, Malkmus' Diagnosis, Reeks.

Surgery—Merillat, Williams, Moller, Dollar, Udall, Liautard, Fleming, White.

Canine Diseases—Glass, Saunders, Hobday.

Obstetrics—Williams, Fleming, De Bruin.

Diseases of Cattle—Moussu and Dollar, Steel.

Pathology—Kinsley, McCallum, Burnett, Kitt, Adami, Moore, Delafield and Prudden, Crocker.

Bacteriology—Buchanan, Kolmer, Herzog, Park, Muir and Ritchie.

Medical Dictionary—Dorland, Stedman, American Medical Dictionary, Gould.

Zoology—Daugherty.

Embryology—Prentiss.

Histology—Schafer, Jordan and Ferguson.

Veterinary Hygiene—Fred. Smith.

Milk Hygiene—Jensen, Ernst, Farrington and Woll.

Meat Inspection—Edelmann, Ostertag.

Parasitology—Neuman, Kaupp, Smythe.

Lameness and Horse Shoeing—Adams, Dollar, Reeks.

Botany—Coulter, Atkinson.

Animal Husbandry—Craig's, Plumb, Gay, Davenport, Marshall, Henry and Morrison.

Dentistry—Merillat, Huidekoper.

N.B.—Students will find it to their advantage not to purchase text-books until they have consulted the instructors in the various subjects as to the choice of books.

GENERAL REGULATIONS

Students may be allowed advanced standing or time credit only in accordance with the regulations of accredited veterinary colleges.

Students are required to attend regularly all class and laboratory exercises unless sufficient reasons exist for their being excused.

A record of attendance of each student will be kept and an attendance of at least eighty per cent. of all class exercises must be maintained unless excused.

The standard for passing in the first and second years shall be forty per cent. in each subject, with an average of fifty per cent. on the whole. In the third and fourth years the pass mark will be fifty per cent. in each subject and sixty per cent. on the whole. In computing results both term work and examinations will be approximated.

Students failing in more than three subjects may be required to take the year's work over again before being permitted to continue the course.

Supplemental examinations must be arranged for and taken on the fifteenth of October. Conditions remaining must be removed before the end of the fall term. A fee of $5.00 will be charged for supplemental examinations.

Students are expected to maintain their studies between the college sessions and to practise for at least five months before graduation with a qualified veterinary preceptor. This term of practice can be completed by the student during any of the summer periods before graduation.

Each student may be required to submit a verified statement or certificate as to the length of time he has spent under a preceptor. The degree is only awarded on the satisfactory completion of the college course and upon passing the prescribed examinations. It is not granted to students under the age of twenty-one years.

Students must observe the general rules of college discipline and conduct as required from time to time by the Principal and the Faculty.

Abuses of the college equipment will not be permitted and the cost of breakages other than those considered to be excusable will require to be defrayed by those responsible.

SCIENCE ASSOCIATION OF THE ONTARIO VETERINARY COLLEGE

CONSTITUTION

ARTICLE 1.—This Association shall be known as The Science Association of the Ontario Veterinary College.

ARTICLE 2.—This Association shall at all times be under the direction and control of the Ontario Veterinary College.

ARTICLE 3.—This Association has for its object the promotion of fraternal feeling, and by scientific intercourse to further the advancement of veterinary knowledge among its members.

ARTICLE 4.—Any student in good standing of the third year class of the Ontario Veterinary College shall be eligible to membership in this Association, provided that any student suspended or expelled from the Ontario Veterinary College shall cease to be a member of this Association for a like period.

ARTICLE 5.—The officers of this Association shall consist of an Honorary President, who shall be the Principal of the Ontario Veterinary College, one active President, one Vice-President and a Secretary-Treasurer.

ARTICLE 6.—It shall be the intent of this Association to hold one meeting each week during the school year.

ARTICLE 7.—This Association shall confer upon each member a certificate of membership in the Association, under the following provisions:

(*a*) That he shall be a graduate of the Ontario Veterinary College.

(*b*) That he shall prepare and present at regular meetings of this Association two essays consisting of not less than five hundred or more than one thousand words each, on subjects of special interest to the veterinary profession; and that these essays shall be open to discussion at the meetings at which they are read.

Such certificates shall be signed and conferred by the Honorary President and active President and Secretary-Treasurer of this Association.

ARTICLE 8.—The fee for membership in this Association shall be $2, payable on or before December 1st, of each year.

CERTIFICATE OF MEMBERSHIP

This certificate is issued to .....
in consideration of his having written and defended two essays on subjects appertaining to Veterinary Science, as required by the constitution and by-laws of the said Science Association of the Ontario Veterinary College.

....

Secretary. *Hon. President.*

YOUNG MEN'S CHRISTIAN ASSOCIATION

This is a branch organization of the University Y.M.C.A., which aims to be of real service to the undergraduates irrespective of creed or denomination. At the commencement of each fall term the members of the social committee are on hand to welcome newcomers and assist them in becoming acquainted. The Secretary of the Association also endeavours to assist students in obtaining suitable accommodation at reasonable prices by furnishing a list of approved boarding-houses. Newcomers should avail themselves of this information. The Association holds a reception and entertainment during the early part of the term to promote fraternity. Regular meetings are held every Sunday afternoon at the college. Able speakers are procured to address the meetings and good music is also arranged for.

LIST OF STUDENTS OF THE ONTARIO VETERINARY COLLEGE

First Year Students, 1918-1919.

Anderson, H. H., Youngstown, Alta.
Bond, E. W., Roland, Man.
Erickson, H. E., Menomanie, Wis.
Foster, O. A., Campbellville, Ont.
Honeywell, H. M., Cannifton, Ont.
Johnston, E. F., Carp, Ont.
Lumsden, M. D., Trinidad, B.W.I.
Nicholas, A. L., Riceville, Ont.
Ormiston, R. R., Raglan, Ont.
Owen, H. McL., Toronto, Ont.
Penhall, G. R., Waterford, Ont.
Thomson. W. G., Keremeos, B.C.
Tingley, H. J., Grenfell, Sask.
Smith, G. W., Yorkton, Sask.

Second Year Students, 1918-1919.

Clarke, W. S., Stratford, Ont.
Coulter, T. J., Saergertown, Pa.
Cowie, R. G., Assiniboia, Sask.
Drennan, W. J., Alliston, Ont.
Frew, A. G., Scotland, Ont.
Gleason, J. L., Lakeside, Ont.
Gray, N. L., Manor, Sask.
Heath. L. McI., Toronto, Ont.
Law, R. G., Toronto, Ont.
McDonald, G. G., Assiniboia, Sask.
Naismith, J. W., Milton West, Ont.
Nesbitt, J. E., Merivale, Ont.
Pallett, E. E. St. G., Arbury, Sask.
Randall, F. B., Hanna, Alta.
Stanley, G. E., Holland Centre, Ont.
Turner, L. E., Mono Road, Ont.
Wheatley, R. H. B., Gateshead-on-Tyne, England.

THIRD YEAR STUDENTS, 1918-1919.

Andries, A. J., Deloraine, Man.
Armstrong, G. P., Rossburn, Man.
Armstrong, J. H. O., Ottawa, Ont.
Beals, E. B., Greene, Me.
Bescoby, F H., Stonewall, Man.
Brazenall, F., Bury, Que.
Carter, S. W., Jacksonville, Ill.
Chase, S. H., Consecon, Ont.
Davis, H. J., Woodstock, Ont.
Fisher, J. R., Brandon, Man.
Gibson, H. H., Newport, N.S.
Gwatkin, R., Strassburg, Sask.
Herman, L. L., Williamsville, N.Y.
Houston, J. E., Toronto, Ont.
Humphreys, F. A., Ardath, Sask.
Johnson, J. E., Thedford, Ont.
Kelleher, W. J., Guelph, Ont.
Laughlin, W. M., Chardon, Ohio.
Learmonth, R., Chicago, Ill.
Lindsay, W., Rosseau, Ont.
McAlpine, L. C., Vankleek Hill, Ont.
McConnell, J. C., Hamiota, Man.
McKercher, D. A., Gravelbourg, Sask.
Marsden, H. W., Excel, Alta.
Martinaglia, G., Randfontein, South Africa.
Miller, G. B., Portage La Prairie, Man.
Miller, M. H., Killarney, Man.
Nicholls, W. E., Hamilton, Ont.
Noble, I. B., Tompkins, Sask.
Nurse, H. W., Wallenstein, Ont.
O'Neill, J. J., Sans Bruit, Que.
Richardson, C. H., Toronto, Ont.
Rivington, R. H., Almonte, Ont.
Smith, J. W., Maxim, Sask.
Stevens, H. C., Sonya, Ont.
Thomas, E. B., Box Grove, Ont.
Ungar, E. B., Napanee, Ont.
Watson, W., Howick, Que.
Webster, F. H., Welwyn, Sask

The following graduates of the Ontario Veterinary College received the degree of Bachelor of Veterinary Science (B.V.Sc.), at the convocation of the University of Toronto, held on June 6th, 1919:

Edwin Blake Beals 1919
Herbert James Davis 1919
Ronald Gwatkin 1919
LeRoy Louis Herman 1919
Leslie Charles McAlpine 1919
Giovanni Martinaglia 1919
Charles Hawthorne Richardson. 1919
Wilfred Watson 1919

SCHOLARSHIPS AND PRIZES

A scholarship of Seventy-Five Dollars offered by the College for the best report on a case was awarded to H. W. Nurse.

The C. D. McGilvray prizes for General Proficiency were awarded as follows:

1st prize—R. Gwatkins.
2nd prize—S. W. Carter.
3rd prize—E. B. Beals.

The L. T. Addison prizes were awarded as follows:

First Year in Zoology and Embryology—
1st prize—G. R. Penhall.
2nd prize—W. T. Thompson.

Second Year in Histology—
1st prize—L. McI. Heath.
2nd prize—G. E. Stanley.

The H. E. Batt prizes for the best Histological drawings were awarded as follows:

First year—E. W. Bond.
Second year—R. H. Wheatley, G. E. Stanley } equal.

LIST OF GRADUATES

OF THE

ONTARIO VETERINARY COLLEGE

Since it was taken over by the Ontario Government

In addition to the following names, over three thousand young men graduated from this College before it was taken over by the Government.

Adams, Frank Jacob	Berlin, Ont.	1911
Ager, E. E.	Velma, Man.	1914
Aikenhead, James Percy	Easton, Md.	1911
Allan, J.	Perth, Ont.	1914
Allen, J. A.	Toronto, Ont.	1916
Alexander, W. H.	Enniskillen, Ont.	1912
Allen, Lunan J.	Geneva, Ohio	1911
Anderson, G. E.	LaGrange, Ind.	1913
Anderson, G. G.	New York, N.Y.	1913
Anderson, H. L.	Des Moines, Iowa	1916
Andrew, A. T.	Oakville, Ont.	1916
Andrews, J. R. C.	Bishop's Crossings, Que.	1913
Appleby, John Henry	Vancouver, B.C.	1909
Armstrong, F. R.	Brockville, Ont.	1914
Armstrong, W. E.	Flimsby, England	1915
Armstrong, G. P.	Rossburn, Man.	1919
Armstrong, J. H. O.	Ottawa, Ont.	1919
Ash, H. E.	Napoleon, Ohio	1915
Atkinson, T. E. F.	Edgely, Ont.	1912
Atmore, B. R.	Parkhill, Ont.	1917
Babcock, C. W.	North Fairfield, Ohio	1916
Babcock, F. M.	Jamestown, N.Y.	1915
Babcock, Walter Henry	West Toledo, Ohio	1911
Baber, M.	Denver, Ind.	1913
Bach, G. R.	Trenton, N.D.	1914
Bailey, J. W.	Bowling Green, O.	1915
Baird, P. R.	Waitsfield, Vt.	1914
Baker, E. A.	Espy, Pa.	1910
Baldwin, C. H.	Barrie, Ont.	1918
Baldwin, C. S.	Laceyville, Pa.	1912
Ballard, W. G.	Dutton, Ont.	1912
Balliet, H. J.	Bowmanstown, Pa.	1912
Banks, Vivian	Toronto, Ont.	1913
Bannister, E. J.	Forest, Ont.	1914
Barker, F. A.	Toronto, Ont.	1913
Barlow, B. E.	Craik, Sask.	1918
Barrington, J. M.	Huntingdon, Que.	1917
Batt, H. E.	Toronto, Ont.	1915
Beall, Walter	Vancouver, Wash.	1910
Beals, E. B.	Greene, Me.	1919
Beaudette, J. E.	Bonville, Ont.	1912
Beaven, C. T.	S. Berwick, Me.	1917

LIST OF GRADUATES—Continued

Beaver, N. G.	Morriston, Ont.	1914
Beggs, R. E.	Linwood, Ont.	1916
Belding, William Arthur	Onaway, Mich.	1911
Bennett, Joseph Edgar	Toronto, Ont.	1911
Bennett, J. E.	Despard, Man.	1914
Bentham, W. G.	Burketon Jct., Ont.	1916
Bescoby, B. A.	Stonewall, Man.	1910
Bescoby, F. H.	Stonewall, Man.	1919
Biddle, Glen	Wauseon, Ohio	1910
Birkin, F.	Vancouver, B.C.	1914
Bishop, H. H.	Ottawa, Ont.	1915
Bitgood, E. M.	Voluntown, Conn.	1910
Bitler, S. E.	Turbotville, Pa.	1909
Black, A. S.	Yorkton, Sask.	1916
Black, W. G.	Snowhill, Md.	1910
Blackwood, Alister Chester	Huntingdon, Que.	1911
Blyth, Robert	Medicine Hat, Alta.	1910
Boast, C. R.	Richmond, Que.	1918
Boast, Robert David	Richmond, Que.	1911
Bond, H. O.	Toronto, Ont.	1916
Booker, Felix D.	Grand Rapids, Mich.	1912
Bornschein, F. C.	Sioux City, Iowa	1913
Boswell, J. F.	Westboro, Mass.	1917
Boswell, W. H.	Westboro, Mass.	1915
Bovaird, J., Jr.	Brampton, Ont.	1915
Bowen, Leroy E.	Lynchburg, Va.	1911
Bowersox, J. F. D.	Aaronsburg, Pa.	1910
Bowie, J. S.	Stoney Mountain, Man.	1916
Bowman, A. E.	Amherstburg, Ont.	1913
Bowman, G. A.	Treherne, Man.	1913
Boyce, Alfred J.	St. John, N.B.	1915
Boyd, C. T.	London, Ont.	1915
Boyd, H.	Essex, Ont.	1913
Boyes, N. R.	Stittsville, Ont.	1918
Brand, J. M.	Stavely, Alta.	1915
Bratton, Roscoe L.	Crawfordsville, Ind.	1911
Brazenall, F.	Bury, Que.	1919
Brent, S. J.	Wyoming, Ont.	1916
Bright, Samuel George	Camlachie, Ont.	1911
Bright, W. H.	Forest, Ont.	1915
Brinsmead, H.	London, Eng.	1916
Brooks, John Mullett	Petrolea, Ont.	1911
Bronson, F. E., Jr.	Hornell, N.Y.	1913
Brown, E. L.	Welch, Okla.	1917
Brown, J. C.	Glasgow, Scotland	1915
Brown, J. N.	Dexter, Me.	1912
Brown, L. A.	Toronto, Ont.	1915
Browne, G. N.	Toronto, Ont.	1915
Brunet, Octave	St. Ann's, Bellevue, Que.	1910
Brydon, A. B.	Portage la Prairie, Man.	1912
Buchanan, C. E.	Blenheim, Ont.	1917
Burke, T. S.	Britannia Bay, Ont.	1918
Burlingame, F. A.	Breckenridge, Mich.	1914
Burnette, C. A.	North Abingdon, Mass.	1916
Burt, Arthur C.	Simcoe, Ont.	1911

LIST OF GRADUATES—Continued

Burt, C. J.	Centreville, N.B.	1912
Byrd, E. H.	Francesville, Ind.	1910
Cain, Charles Stuart	Dundas, Ont.	1911
Caldwell, H. L.	Dauphin, Man.	1917
Caley, D. R.	Waterford, Ont.	1912
Cameron, A. R.	Vegreville, Alta.	1915
Cameron, W. R.	Huntingdon, Que.	1912
Campbell, A. McG.	Frobisher, Sask.	1918
Campbell, Donald John	Dunvegan, Ont.	1911
Campbell, J. N.	Fairmount, Minn.	1915
Campbell, T. J.	Moffat, Ont.	1912
Campbell, J. W.	Clearwater, Man.	1914
Canty, John Martin	Wells River, Vt.	1911
Card, B. O.	Sylvania, Penn.	1913
Carey, M. L.	Millgrove, Ont.	1916
Carey, W. F.	New London, Wis.	1916
Carmichael, B. T.	Sudbury, Ont.	1917
Carolan, J. L.	Dobbs' Ferry, N.Y.	1910
Carley, A. A. H.	Consecon, Ont.	1912
Carson, M.	Rossburn, Man.	1915
Carter, T. B.	Portage la Prairie, Man.	1914
Carter, S. W.	Jacksonville, Ill.	1919
Case, E. G.	Courtland, N.Y.	1909
Cash, G. B.	Alexandria, Ohio	1909
Casler, Harley D.	Little Falls, N.Y.	1911
Cass, H. L.	Saltcoats, Sask.	1910
Caswell, F. E.	Hudson, Mich.	1913
Catlin, F.	Montrose, Pa.	1914
Catt, R. B.	Forest, Ont.	1916
Chambers, A.	Treherne, Man.	1918
Chambers, P. A.	Ormstown, Que.	1909
Childs, T.	Stavely, Alta.	1915
Chipman, G. R.	Grand Pre, N.S.	1913
Chase, S. H.	Consecon, Ont.	1919
Christian, W.	Outlook, Sask.	1913
Christian, O.	Drayton, Ont.	1915
Christie, N. D.	Picton, Ont.	1910
Church, W. G.	Aylesford, N.S.	1914
Claffey, T. J.	Colgate, Wis.	1917
Classy, W. J.	Cleveland, Ohio	1913
Clegg, R.	Canora, Sask.	1914
Cober, Aaron	Toronto, Ont.	1911
Cobb, B. E.	Scranton, Pa.	1918
Cockerton, G. C.	New York, N.Y.	1910
Coffin, John M.	Toledo, Ohio	1910
Cole, A. B.	Montrose, Pa.	1910
Cole, G. P.	Sharon, Pa.	1910
Colebourn, Harry	Dewsbury, Eng.	1911
Coleman, G. A.	North Sydney, N.S.	1918
Coleman, N. J.	Forester's Falls, Ont.	1918
Collett, Howard Barker	Waskada, Man.	1911
Coliton, C.	Oshawa, Ont.	1913
Conway, L. E.	Swayzee, Ind.	1912
Connor, John Emmitt	Pawtucket, R.I.	1911
Cooley, L. S.	Ira, N.Y.	1910

LIST OF GRADUATES—Continued

Coombes, F. M.	Brandon, Man.	1909
Coon, W. B.	Steele, N.D.	1912
Cook, E. H.	Friendship, N.Y.	1912
*Corbett, C. C.	Crystal City, Man.	1916
Corbett, E. R.	Winnipeg, Man.	1916
Cornell, Austin Thomas	Elkton, Mich.	1911
Cowan, H. W.	Compton, Que.	1912
Coxe, S. J.	Brandon, Man.	1909
Cox, W. R.	Millington, Mich.	1913
Craig, H. W.	Darlingford, Man.	1914
Crawford, N. M.	Brampton, Ont.	1918
Croft, W.	Tavistock, Ont.	1916
Croken, I. E.	Norborough, P.E.I.	1912
Crump, A. G.	Purcellville, Va.	1914
Cunningham, C. G.	Tatamagouche, N.S.	1915
Cunningham, J. R.	Bayhead, N.S.	1915
Curdt, C. G.	Sperling, Man.	1918
Currie, A. D.	Shanty Bay, Ont.	1918
Curry, J. M.	Hartford, Conn.	1910
Curry, B. G. E.	Gettysburg, Pa.	1909
Dannley, G. R.	Medina, Ohio	1914
Davidson, W. B.	Neptune, Sask.	1918
Davis, H. J.	Woodstock, Ont.	1919
Davisson, Harry Lester	Mechanicsburg, Ohio	1911
DeBoissiere, V. R.	Port of Spain, Trinidad	1914
Dellerat, R. B.	Pittsfield, Mass.	1910
De Valdivielso, F. A. M.	Matanzas, Cuba	1912
*Dennis, M. C.	Detroit, Mich.	1915
de Varennes, E. A.	Burlington, Vt.	1913
Dickinson, C. S.	Port Hope, Ont.	1913
Dickinson, Jonathan	Rexton, N.B.	1911
Dill, W. I.	Hantsport, N.S.	1916
Dixon, H. L.	Niagara Falls, Ont.	1910
Doll, T. B.	Lancing, Eng.	1912
Donahoe, A. A.	Scranton, Pa.	1915
Donovan, L. A.	Cold Brook, N.B.	1916
Dottin, W. C.	Trinidad, B.W.I.	1916
Douglas, Kenneth	Stratford, Ont.	1913
Dove, R. L.	Schomberg, Ont.	1914
Dowdle, J. H.	Orid, N.Y.	1915
Ducey, J.	Shepherd, Mich.	1916
Ducey, M. D.	Merrill, Mich.	1916
Duclos, F. N.	Mittineague, Mass.	1913
Duncan, William	Toronto, Ont.	1911
Duncheskie, J., Jr.	Shamokin, Pa.	1914
Dunn, J.	Angus, Ont.	1915
Dunnigan, C. M.	Oxbow, Sask.	1917
Dunkelberger, John William	Bernville, Pa.	1911
Dunbar, R. R.	Brandon Hills, Man.	1912
*Durrand, Don.	Strathcona, Alta.	1911
Duthie, R. C.	Pincher Creek, Alta.	1914
Early, F. D.	Saskatoon, Sask.	1913
Eason, William	Paisley, Ont.	1911

* Deceased.

LIST OF GRADUATES—Continued

Eberle, W. H.	St. Charles, Mo.	1914
Ebright, N.	Mifflintown, Pa.	1912
Eckert, E. M.	Sebringville, Ont.	1918
Eckert, H. A.	Sebringville, Ont.	1912
Edmunds, J. A.	Jasper, Ont.	1916
Edwards, C. L.	Brandon, Man.	1915
Edwards, W. C.	Manilla, Ind.	1913
Edwards, John	Newark, Ohio	1911
Ellah, J. N.	Nortonville, Ont.	1915
Elliott, E. W.	Grandin, N.D.	1910
Ellis, H. E.	Burk's Falls, Ont.	1914
Ellsworth, L. H.	Marshville, Ont.	1915
Emmer, F. J.	Shepherd, Mich.	1916
Estes, H. R.	Batavia, N.Y.	1912
Everett, P. G.	Simcoe, Ont.	1918
Ewalt, B. D.	Mt. Clemens, Mich.	1914
Ewalt, G. F.	Mt. Clemens, Mich.	1914
Ewing, F. R.	Medina, Ohio	1914
Fagin, H. V.	Mono Mills, Ont.	1914
Failor, Harry Franklin	Lima, Ohio	1911
Faivre, C. F.	Latrobe, Pa.	1915
Farrel, J. J.	Rose Hill, Lot 16, P.E.I.	1913
Farrell, M. I.	Arthur, Ont.	1917
Fasken, J. W. R.	Elora, Ont.	1916
Finnemore, C. W.	Toronto, Ont.	1914
Fisher, T. E. H.	Nassau, Bahamas	1914
J. R. Fisher	Brandon, Man.	1919
Fitch, W. H.	Maquoketa, Iowa	1917
Fitzmaurice, P. J.	Auburn, Mich.	1917
Flanders, C. M.	Mohawk, Ont.	1915
Fagg, P. J.	Peacham, Vt.	1913
Flanary, W. F.	St. Charles, Minn.	1910
Flora, L.	Flora, Ind.	1913
Foley, J. W.	Hartford, Wis.	1917
Foreman, O. H.	Red Deer, Alta.	1918
Follis, W. W. D.	Owen Sound, Ont.	1917
Forbes, H. L.	Wyoming, Ont.	1916
Ford, L. B.	Vernon, N.Y.	1916
Ford, J. A.	Sardis, B.C.	1910
Forster, J.	Leslie, Sask.	1914
Forsyth, W. W.	Harriston, Ont.	1913
Foster, E. E.	Campbell's Cross, Ont.	1910
Foster, R. H.	Hyndford, Ont.	1915
Fowler, Joseph Albert	Welsford, N.B.	1911
Fox, R. G.	Udney, Ont.	1915
Frame, A. S.	Treherne, Man.	1910
Fraser, J. H.	New Glasgow, N.S.	1910
Frayn, G.	Forest, Ont.	1915
French, C. F.	Rockland, Me.	1910
Furneaux, J. H.	St. John's, Nfld.	1918
Galbraith, W. T.	London, Ont.	1917
Gallagher, L. J.	Elroy, Wis.	1917
Gammell, D. T.	Barnet, Vt.	1918
Garrett, H. H.	Sarnia, Ont.	1910
Gibson, A. B.	Govan, Sask.	1915

LIST OF GRADUATES—Continued

Gibson, J. B.	North Vancouver, B.C.	1909
Gibson, H. H.	Newport, N.S.	1919
Gohn, George Arthur	Toronto, Ont.	1911
Goss, R. C.	West Danville, Vt.	1916
Gough, W. E.	Toronto, Ont.	1913
Grace, W. E.	Jacksonville, Fla.	1910
Graham, H. C.	Farwell, Mich.	1914
Grant, A. E.	Dunvegan, Ont.	1914
Gray, R. G.	Edinburgh, Scotland	1912
Grogan, W. S.	Treherne, Man.	1914
Gruber, John	Waverly, Iowa	1911
Gruer, D.	Aubrey, Que.	1918
Gwatkin, R.	Strassburg, Sask.	1919
Hackett, J. F.	Mt. Pleasant, Mich.	1910
Hafele, J. A.	Bovina Center, N.Y.	1913
Hafey, J. M.	Holyoke, Mass.	1910
Hall, Orlan	Brantford, Ont.	1910
Halbert, S. F. T.	Markdale, Ont.	1918
Halsey, Albert Beaton	Carillon, Que.	1911
Hammerberg, C. E.	Carney, Mich.	1910
Hanagan, R.	Vernon, N.Y.	1917
Hancock, J. R.	Clarke, Ont.	1910
Hanmore, G. S.	Vesta, Ont.	1912
Hanna, J. E.	Rosemount, Ont.	1913
Harding, A. E.	Jerseyville, Ill.	1916
Harris, John Quincy	Canaan, Vt.	1911
Harris, W. S.	Boston, Mass.	1910
Harris, Walter Jay	Minden City, Mich.	1911
Harrington, J.	Ancaster, Ont.	1912
Harvey, J. G.	Morrisburg, Ont.	1910
Haskins, J. A.	Pittsfield, Ill.	1912
Hawke, Walter Lawson	Medicine Hat, Alta.	1911
*Haynes, J. A.	Canaan, Vt.	1912
Hearns, Edward Blake	Cedar Springs, Ont.	1911
Heffron, J. L.	Toronto, Ont.	1916
Hennan, J. H.	Roland, Man.	1912
Henry, Frank	Troy, N.Y.	1910
Heppleston, J. W.	Yorkshire, Eng.	1918
Herman, L. L.	Williamsville, N.Y.	1919
Heron, F. V.	Williamsfield, Jamaica	1910
High, F. W.	Coleman, Mich.	1914
Hill, E. M.	Carholme, Ont.	1916
Hill, S. A.	Toronto, Ont.	1915
Hill, W. R.	Lanigan, Sask.	1915
Hilgeneck, E. H.	Elmore, Ohio	1909
Hobson, G. K.	Cypress River, Man.	1913
Hodam, W. F.	Le Mars, Iowa	1912
Hodgson, H. H.	Liverpool, England	1915
Hodgson, J. W.	Owen Sound, Ont.	1918
Hodgson, R. K.	Toronto, Ont.	1909
Hoey, A.	Creemore, Ont.	1917
Hoey, G.	Creemore, Ont.	1913
Hogan, J. D.	Ottawa, Ont.	1917
Holmes, H. N.	Norfolk, Va.	1910

* Deceased.

LIST OF GRADUATES—Continued

Holmes, Noel Joy	Kindersley, Sask.	1911
Hollister, A. E.	Montrose, Penn.	1913
Hopkins, A. W.	Stavely, Alta.	1917
Horwill, M. H.	Meota, Sask.	1918
Hoskin, K. L.	Wyoming, Ont.	1918
Hotchkis, T. F.	Toronto, Ont.	1915
Houston, J. E.	Toronto, Ont.	1919
Howden, William J.	Flint, Mich.	1911
Howe E. E,	Rawdon, Que.	1912
Howell, H. N.	Vernon, Ont.	1918
Hudgins, P. H.	Fredericksburg, Va.	1910
Hudson, C.	Zealandia, Sask.	1915
Hughes, A.	New Lowell, Ont.	1913
Hunter, R.	Wavy Bank, Man.	1913
Hunter, A. H.	Belleville, Ont.	1914
Humphrey, F. M.	Bluemont, Va.	1910
Humphreys, F. A.	Ardath, Sask.	1919
*Hurd, C. L.	Toronto, Ont.	1912
Huston, J.	Carman, Man.	1914
*Huston, W.	Carman, Man.	1915
Hyslop, H. T.	Smith's Falls, Ont.	1913
*Irwin, Ernest Edgar	Toronto, Ont.	1911
Irwin, Ivan Basil	Stonewall, Man.	1911
Jagger, T. H.	Toronto Ont.	1910
Jahn, W. J.	Besom, N.Y.	1910
James, N. C.	Leamington, Ont.	1910
James, N. V.	Gladstone, Man.	1909
James, R. E.	Pittsfield, Ill.	1912
James, R. T.	Carp, Ont.	1915
James, W. E.	Norwich, Ont.	1914
Jaques, Samuel	Simcoe, Ont.	1911
Jaques, J.	Simcoe, Ont.	1915
Jardine, Ernest Fernance	Antigua, B.W.I.	1911
Jervis, J. G.	Vancouver, B.C.	1912
Johnson, J. E.	Thedford, Ont.	1919
Jose, G. H.	Kirton, Ont.	1917
Joslin, E. M.	Morrice, Mich.	1910
Judd, A. W.	Bear Lake, Mich.	1912
Jull, G. N.	Norwich, Ont.	1916
*Kee, W. J.	St. John, N.B.	1916
Kee, Roy	Toronto, Ont.	1911
Keddy, C. A.	Dartmouth, N.S.	1916
Keirstead, W. P.	Halifax, N.S.	1914
Keleher, John Joseph	Portage la Prairie, Man.	1911
Kelleher, A. J.	Arthur, Ont.	1910
Kelleher, J. S.	Arthur, Ont.	1917
Kelleher, W. J.	Guelph, Ont.	1919
Kelly, G.	Buttonville, Ont.	1910
Kelly, Roy Walker	Brechin, Ont.	1911
Kemp, D. T.	St. Louis, Mich.	1910
Kennedy, Bruce Donald	Clear Lake, Wash.	1911
Kennedy, M. P.	Lakefield, Ont.	1912
Kenney, P. W.	Oberlin, Ohio	1915

* Deceased.

LIST OF GRADUATES—Continued

Kenney, W. G. C.	Acton, Ont.	1915
Keresey, D. R.	West Stockbridge, Mass.	1910
Kerr, J. P.	Millbank, Ont.	1916
Kerr, S. S.	Crystal City, Man.	1915
Keyes, Berton	Dartmouth, N.S.	1911
Killips, H.	Mt. Pleasant, Iowa	1910
Kinney, G. G.	Picton, Ont.	1910
Knowles, W. B. R.	Swift Current, Sask.	1914
Koch, G. E.	Ardenode, Alta.	1918
Korinek, A. W.	Salem, Ore.	1910
Korinek, G. F.	Salem, Ore.	1910
Kyddson, R. J.	Kinde, Mich.	1910
Kyle, Wm.	Calvin, N. Dak.	1912
Laframboise, J. H.	Plantagenet, Ont.	1914
Laitinen, E.	North Colebrook, Conn.	1916
Langdon, Harry Brown	Charlestown, W. Va.	1911
Langford, S. M.	Martinsburg, W. Va.	1912
Laughlin, R. R.	Cleveland, Ohio	1913
Laughlin, W. M.	Chardon, Iowa	1919
Laurie, J. H.	Locust Hill, Ont.	1913
Law, S. T.	Randboro, Que.	1913
Lawrence, G. C.	Myrtle, Ont.	1916
Lawrence, S. E.	Hawtrey, Ont.	1914
*Lawson, H. D.	Shoal Lake, Man.	1914
Lay, G. E.	Alameda, Sask.	1918
Lay, R. H.	Alameda, Sask.	1916
Leadbeater, J. A.	Pelly, Sask.	1913
Learmonth, R.	Chicago, Ill.	1919
Ledgerwood, G. A	Beachburg, Ont.	1914
Lee, R. M.	Cheshire, Eng.	1916
Lehman, A. W.	Victoria, B.C.	1916
Libby, R. E.	Richmond, Me.	1916
Lindsay, W.	Rosseau, Ont.	1919
Logan, F.	Forest, Ont.	1914
Long, R. E.	Mount Solon, Va.	1912
Love, B. I.	Greenbank, Ont.	1915
Lueking, E. O.	St. Louis, Mo.	1911
Lumsden, R. E.	Marmora, Ont.	1910
Lundie, A. C.	Huntsville, Ont.	1910
Lynch, D. J.	Rosebush, Mich.	1919
McAlister, A. D.	Shelburne, Ont.	1917
McAllister, Thomas Andrew	Kinde, Mich.	1911
McAlpine, L. C.	Vankleek Hill, Ont.	1919
McCabe, W. J.	Alliston, Ont.	1918
McCarthy, J. R.	Lansing, Mich.	1915
McCaskill, A. W.	Clear Springs, Man.	1913
McChesney, D. H.	Napinka, Man.	1910
McConnell, J. C.	Hamiota, Man.	1919
McCord, F. A.	Brockville, Ont.	1910
McCoy, W. D.	Grand Rapids, Mich.	1913
McCoy, G. C.	Fredericton, N.B.	1912
McCullough, Hugh	Wellington, Ont.	1910
McDermott, G. F.	Los Angeles, Cal.	1910

* Deceased.

LIST OF GRADUATES—Continued

McDermott, J. J.	Mt. Forest, Ont.	1910
McDonald, D.	Grand River, P.E.I.	1915
McDonald, D. W.	Assiniboia, Sask.	1915
McDonald, G. J.	Tyvan, Sask.	1913
McDougall, A. W.	Aurora, Iowa	1915
McDougall, W. F.	Rhein, Sask.	1916
McDowell, John James	Watertown, S. Dak.	1911
McEwen, H. R.	Stonewall, Man.	1913
McEwen, N. E.	Ormston, Que.	1912
McFarlane, A. McP.	Winnipeg, Man.	1915
McGee, H.	Lemberg, Sask.	1915
McGuire, J. B.	Seneca Falls, N.Y.	1912
McIntosh, C. W.	Togo, Sask.	1913
McIntosh, G. W.	Beaumont, Texas	1910
McIntyre, George Duncan	Howick, Que.	1911
McIntyre, J. A.	Owensville, Sask.	1910
McIntyre, A. T.	Elkton, Mich.	1912
McKay, J. W.	Braemer, Ont.	1913
McKee, S. C.	Drumheller, Alta.	1916
McKee, J. C.	Chester, Iowa	1910
McKelvey, S. A.	Alliston, Ont.	1918
McKeon, M. G.	Fenton, Mich.	1916
McKenzie, G. P.	Regina, Sask.	1913
McKercher, D. A.	Gravelbourg, Sask.	1919
McKinnon, John Alexander	Manilla, P.I.	1911
McKinnon, K. W.	Hampton, P.E.I.	1918
McLachlan, E. J.	Rosebush, Mich.	1917
McLean, A. T.	Moncton, N.B.	1910
McLellan, D. J.	Wyoming, Ont.	1917
McLellan, J. A.	Edmonton, Alta.	1914
McLeod, M. M.	Lockwood, Sask.	1913
McMahon, T. W.	Delhi, Ont.	1914
McManus, J. H.	Weyburn, Sask.	1912
McMaster, D. A.	Laggan, Ont.	1915
McMaster, J. G.	Laggan, Ont.	1912
McNabb, Ferdinand Robert	Ithaca, Mich.	1911
MacBride, John	Veterinary Inspector, City of Toronto.	1911
MacDonald, J. G.	Grand View, Man.	1914
MacDougall, W. F.	Cana, Sask.	1912
MacFadzean, W. B.	Fergus, Ont.	1914
MacIntosh, Robert Duncan	Ardersier, Scotland	1911
Macphie, H. H.	Antigonish, N.S.	1917
MacIsaac, Daniel Alphonsus	Antigonish, N.S.	1911
MacKie, C.	Auckland, New Zealand	1916
MacLean, C. C.	Beachburg, Ont.	1913
MacLeod, A. H.	Forest, Ont.	1916
MacMillan, Donald	Magog, Que.	1909
Mahaffy, N. L.	Dublin, Ont.	1917
Malmas, A. J.	Wetaskiwin, Alta.	1916
Manchester, W.	Carp, Ont.	1915
Manning, G. M.	Oshawa, Ont.	1914
Marcus, J. F.	Bothwell, Ont.	1914
Markham, H. V. O.	Yorkton, Sask.	1912
Marsden, H. W.	Excel, Alta.	1919

LIST OF GRADUATES—Continued

Marsh, M. O.	Epping, Sask.	1913
Martin, G. R.	Stanford, N.Y.	1910
Martin, S. T.	Winnipeg, Man.	1909
Martin, J. A.	Roland, Man.	1912
Martinaglia, G.	Randfontein, S. Africa	1919
Mason, R. M.	Mono Mills, Ont.	1914
Maxwell, F. E.	Brentwood, Ont.	1916
Maynard, Earl R.	South Butler, N.Y.	1911
Maze, Luther Anderson	Morenci, Mich.	1911
Meehan, L. L.	Cupar, Sask.	1916
Melanson, J. T.	Little Brook, N.S.	1918
Millar, J. L.	Asquith, Sask.	1918
Miller, E. L.	Topsham, Vt.	1918
Miller, E. S.	Elkton. Mich.	1914
Miller, Ernest C	Flat Rock, Ind.	1911
Miller, F. B.	Brooklyn, Pa.	1910
Miller, P. A.	Hepneris, Va.	1910
Miller, G. B.	Portage La Prairie, Man.	1919
Miller, M. H.	Killarney, Man.	1919
Milner, Richard Johnson	Linwood, Ont.	1911
Milton, Morley H.	Albert Mines, N.B.	1911
Mitchell, C. A.	Clarksburg, Ont.	1914
Mitchell, A. F.	Yorkton, Sask.	1916
*Monroe, A. R.	Petrolea, Ont.	1910
Monroe, William Reuben	Petrolea, Ont.	1911
Moore, B. O'K.	Telford, Tenn.	1915
Morgan, C. E.	Chatsworth, Ont.	1917
Morin, J. R.	Holyoke, Mass.	1913
Morris, D. P.	Mt. Elgin, Ont.	1917
Morrison, D. McC.	Keith, Que.	1914
Morrison, W. L.	Weir, Que.	1916
Mosher, Joseph	Marseilles, N.Y.	1910
Moynahan, J. J.	Holyoke, Mass.	1910
Moynihan, Wm.	Don, Ont.	1910
Mumford, J. E.	Toronto, Ont.	1915
Murray, A. G.	Woodstock, Ont.	1913
Murphy, Henry	Labelle, Que.	1911
Myers, F. E.	Shepherd, Mich.	1912
Naughton, J. J.	Scranton, Penn.	1913
Nedeau, H. M.	Harmonsburg, Penn.	1913
Neely, M. J.	Lemberg, Sask.	1915
Nelson, Chester Lee	Mercer, Pa.	1911
Nelson, H. D.	Forest, Ont.	1912
Nichol, G. A.	Medicine Hat, Alta.	1913
Nichols, W. S.	Ravenna, Neb.	1910
Nicholls, W. E.	Hamilton, Ont.	1919
Nicholson, J. O.	Teeterville, Ont.	1916
Noble, I. B.	Tompkins, Sask.	1919
Noonan, James Earl	Winchester, Va.	1911
North, L. L.	Binghampton N.Y.	1914
Notting, E. S.	Dartmouth, N.S.	1918
Nugent, T. F.	Rockport, Mass.	1909
Nurse, H. W.	Wallenstein, Ont.	1919

* Deceased.

LIST OF GRADUATES—Continued

O'Brien, G. J.	New York, N.Y.	1910
O'Brien, J. H.	Westboro, Mass.	1912
O'Brien, W. P.	Elmsdale, P.E.I.	1916
O'Gogarty, Maurice Gordon	Connemara, Ire.	1912
O'Hara, Samuel Loten	Lascelles, Que.	1911
O'Neill, J. J.	Sans Bruit, Que.	1919
Osman, R. F.	Smith's Switch, Ont.	1916
Ottewell, Charles Faulding	Flesherton, Ont.	1911
Owen, E. R.	Friendsville, Pa.	1916
Packard, E. W.	Brockton, Mass.	1913
Page, F. R.	Thornhill, Ont.	1912
Page, A. E.	Glenella, Man.	1916
Paquette, Gladwin Herbert	Veterinary Inspector, City of Toronto.	1911
Paquette, R. S.	Toronto, Ont.	1915
Parker, C. S.	Fayette, Iowa	1914
Parker, J. E.	Mountain View, Alta.	1914
Parkhurst, Roy Nelson	Buffalo, N.Y.	1911
Parkinson, C. A.	Mt. Pleasant, Mich.	1914
Parmiter, F.	Edmonton, Alta.	1915
Parson, A. T.	Jamestown, N.Y.	1914
Parsons, Wm.	Sussex, Eng.	1912
Pearen, John Percy Arnold	Radisson, Sask.	1911
Perkins, R. W.	St. Stephen, N.B.	1918
Perry, W. H.	Hornell, N.Y.	1913
Pfarr, A. W.	Pittsburg, Pa.	1910
Pickup, E. S.	Cattaraugus, N.Y.	1916
Pilkey, M.	La Vallee, Ont.	1912
Pinkerton, D. H.	Maple, Ont.	1912
Pokrandt, O. A.	Holstein, Ont.	1910
Pollock, L. E.	Veterinary Inspector, City of Toronto.	1912
Pook, G.	Red Jacket, Sask.	1914
Pounder, John R.	Forester's Falls, Ont.	1913
Price, William Bertram	Carstairs, Alta.	1911
Preston, Marvin James	Moosomin, Sask.	1911
Purcell, James Thomas	Huntingdon, Que.	1911
Quirk, J. A.	Ware, Mass.	1915
Ray, B. W.	Dauphin, Man.	1915
Reed, D. V.	London, England	1915
Reid, J. G.	Brule Shore, N.S.	1915
Reichley, J. R.	Kratzerville, Pa.	1915
Rhody, F. S.	Ridgetown, Ont.	1913
Rich, J. L.	Bishop's Crossing, Que.	1913
Richmond, Andrew R. B.	Chief of the Division of Veterinary Inspection, City of Toronto	1911
Rink, J., Jr.	Factoryville, Pa.	1914
Richardson, C. H.	Toronto, Ont.	1919
Robertson, W. A.	Toronto, Ont.	1916
Robertson, A.	Beachburg, Ont.	1915
Robertson, D. M.	Victoria, W., B.C.	1912
Robins, W. A.	Richmond, Va.	1910
Robinson, L. R.	Mount Lebanon, Pa.	1916
Robinson, E. D.	Youngstown, N.Y.	1910
Robinson, F. W.	Montreal, Que.	1914
Robson, I.	Loreburn, Sask.	1918
Rooks, A. L.	Port of Spain, Trinidad, B.W.I.	1916

LIST OF GRADUATES—Continued

Rolfe, J. L.	Cooper's Plains, N.Y.	1912
Rose, G. A.	Picton, Ont.	1915
Rosenberger, R. W.	Toledo, Ohio	1912
Roth, L. H.	Greenville, Pa.	1916
Rowles, William Francis	Goodhue, Minn.	1911
Rowson, A. E.	Loreburn, Sask.	1918
Roy, J. A.	Campbellton, N.B.	1914
Royer, David Richard	Jamestown, Pa.	1911
Rozine, Walter	Elmore, Ohio	1911
Rugger, F. E.	Maquoketa, Iowa	1914
Russell, F. F.	Oxford, N.H.	1913
Ruth, V. M.	Franconia, Penn.	1913
Rutherford, F. W.	Maysville, Mo.	1910
Ryan, C. L.	Dexter, Me.	1912
Salisbury, E.	Toronto, Ont.	1916
Salisbury, V. E.	Medina, Ohio	1913
Schaaf, Carl Martin	Elmore, Ohio	1911
Schafer, Claud C.	Howell, Mich.	1911
Schilt, C. C.	Bremen, Ind.	1916
Schmidt, A. C.	Armstrong, Iowa	1914
Schofstall, A. C.	Joliet, Pa.	1910
Schofield, F. W.	London, Eng.	1910
Schuey, G. B.	Loyal, Wis.	1910
Scott, J. D.	Scotstown, Que.	1915
Secord, J. B. A.	Harley, Ont.	1917
Selmser, Frederic	Gloverville, N.Y.	1910
Sellman, W. J.	Little Falls, N.Y.	1918
Sewell, K. D.	Brampton, Ont.	1914
Seymour, W.	Onion Lake, Sask.	1913
Sharp, A. J.	Red Creek, N.Y.	1917
Sharp, F. H.	Gull Lake, Sask.	1915
Sharpe, W. G.	Rokeby, Sask.	1913
Shaw, W. J.	Killarney, Man.	1916
Shepherdson, J. S.	Walter's Falls, Ont.	1915
Sheppard, J. A.	Elora, Ont.	1918
Shields, W. G.	Shelburne, Ont.	1913
Shively, W. G.	Knox, Pa.	1909
Shull, G. H.	Horatio, Ark.	1916
Shumway, C. S.	Bradford, Vt.	1916
Siemer, C. E.	Moose Lake, Minn.	1916
Simpson, H. W.	Orangeville, Ont.	1917
Simpson, J.	Yorkton, Sask.	1912
Sims, C. B.	Argyle, N.S.	1914
Sinclair, H.	Atlanta, Ind.	1913
Sissons, A. T.	Medicine Hat, Alta.	1912
Skelton, R. T.	Sheffield, Eng.	1912
Skinner, F.	Roland, Man.	1913
Sleeth, T. E.	Vancouver, B.C.	1913
Smead, M. J.	Pavilion, N.Y.	1910
Smith, F. D.	Coronation, Alta.	1915
Smith, F. W. B.	Vancouver, B.C.	1916
Smith, H. W.	Morven, Ont.	1912
Smith, J. G.	Hillier, Ont.	1914
Smith, J. W.	Kettleby, Ont.	1918
Smith, Wesley Alfred	Hemlock, Ont.	1911

LIST OF GRADUATES—Continued

Smith, W. A., Jun.	Pringhar, Iowa	1918
Smith, J. W.	Maxim, Sask.	1919
Sparks, Harry Dixon	Ottawa, Ont.	1911
Sparrow, M.	Vancouver, B.C.	1912
Spearman, H.	Stittsville, Ont.	1917
Spearman, W.	Stittsville, Ont.	1915
Speirs, W.	Mayfield, Ont.	1914
Sprunk, G. F.	Graytown, Ohio	1910
Spurr, S. F.	Round Hill, N.S.	1916
Stanford, J. A.	Dartmouth, N.S.	1915
Stanford, O. H.	Randolph, Pa.	1916
Stanhope, R. B.	Whiting, Me.	1915
Starnaman, G. W.	Berlin, Ont.	1914
Steen, H. G.	St. Amedee, Que.	1918
Steen, J.	St. Amedee, Que.	1914
Steeves, H. W.	Albert Mines, N.B.	1915
Stevens, H. C.	Sonya, Ont.	1919
Steiner, E. S.	Bergen, N.Y.	1917
Stetson, Henry C.	North Thetford, Vt.	1911
Stevens, Walker William	Yale, Mich.	1911
Stevenson, William Loren	Beachburg, Ont.	1911
Stieg, H. E.	Tonawanda, N.Y.	1915
Stinchcombe, William Alfred	Weyburn, Sask.	1911
Stinson, I. J.	Colgate, Sask.	1918
Stirk, S. D.	Brampton, Ont.	1912
Storey, H. C.	Darlingford, Man.	1914
Stuart, J. McL.	Osgoode Station, Ont.	1914
Stubbs, W. F. R.	Caledon, Ont.	1913
Sullivan, J. L.	Glace Bay, N.S.	1914
Swail, L. H.	Randboro, Que.	1913
Swenson, Signast R.	Esmond, N. Dak.	1911
Symington, W. W.	Lipton, Sask.	1913
Tanner, Archibald Campbell	Watford, Ont.	1911
Taylor, M. H.	Oak Lake, Man.	1916
Taylor, H. A.	Carman, Man.	1913
Templeton, E. G.	Ames, Iowa	1917
Theodore, E.	Port of Spain, Trinidad	1914
Thomas, E. B.	Box Grove, Ont.	1919
Thompson, C. F.	Picton, Ont.	1915
Thompson, J. T.	Moosomin, Sask.	1913
Thompson, William Aylmer	Canandaigua, N.Y.	1911
Todd, R. C.	Vernon, N.Y.	1915
Towill, W. F.	Moosomin, Sask.	1917
Tracy, O. G.	Apalachin, N.Y.	1915
Troutman, W. A.	Port Trevorton, Pa.	1914
*Truman, A.	Elmore, Ohio	1912
Tumin, A. G.	Syracuse, N.Y.	1917
Tupling, Richard Gordon	Honeywood, Ont.	1911
Ungar, E. B.	Napanee, Ont.	1919
Upright, Joseph W.	Little Falls, N.Y.	1911
Vanderhoof, W. M.	Seneca Falls, N.Y.	1912
Van Vranken, E. W.	Sharon Springs, N.Y.	1912
Vickers, R. J.	Brighton, Eng.	1912

* Deceased.

LIST OF GRADUATES—Continued

Vining, A. M.	Ingersoll, Ont.	1918
Vollmer, C. G.	Wauseon, Ohio	1913
Wagner, A. C.	Gladstone, Man.	1917
Waind, G. W.	Milton, N. Dakota	1912
Walker, E. C.	Wishek, N. Dak.	1918
Walker, Edwin Paul	Bowling Green, Ohio	1911
Walker, James Elwood	Dunkerron, Ont.	1911
Walks, W. G.	Chesley, Ont.	1917
Wall, S. L.	Forest, Ont.	1914
Wallace, Bruce M.	Batavia, N.Y.	1911
Wallace, C. L.	Wisbeach, Ont.	1910
Walsh, J. A.	Drayton, Ont.	1910
Ward, H. E.	Hillsboro, N.H.	1916
Warner, Robert John	Owendale, Mich.	1911
Warner, E. S.	Pitcairn, Pa.	1912
Watson, W.	Howick, Que.	1919
Watt, H. J.	Balmoral, Man.	1917
Watters, G. L.	Red Creek, N.Y.	1917
Way, A. J.	Rawdon, Que.	1912
Weale, C. C.	Toronto, Ont.	1918
Weaver, Cecil Herbert	Chatham, Ont.	1911
Webster, F. H.	Welwyn, Sask.	1919
Welbanks, H.	Toronto, Ont.	1915
Welsh, Thomas Henry	Union Springs, N.Y.	1911
West, W. E. S.	Campbellford, Ont.	1914
Westfall, J. H.	Brookton, N.Y.	1913
Whitehead, George	Fernie, B.C.	1911
Wiley, S. E.	Markdale, Ont.	1917
Williams, J. E.	Sunderland, Ont.	1915
Wilson, R. G.	Arkona, Ont.	1910
Wittey, C. W.	Elmore, Ohio	1912
Wood, F.	Mackville, Ont.	1916
Wood, W. H.	Baldur, Man.	1916
Wood, J. F.	London, Ont.	1913
Wood, G. D.	Hartland, Vt.	1909
Wood, William Ivan	New Boyne, Ont.	1911
Wood, W. R.	Summerside, P.E.I.	1915
Woodard, James Alban	Shingle House, Pa.	1911
Wolfe, C. E.	Durham, Ont.	1913
Wolff, H. H.	Valcartier, Que.	1917
Wooldridge, E.	Seagrave, Ont.	1914
Wright, S. B.	Syracuse, N.Y.	1913
Wyatt, C. N.	Rood House, Ill.	1910
Wyllie, F. W.	Attica, N.Y.	1913
Young, F. A.	Tiro, Ohio	1913
Young, W. B. M.	Portage la Prairie, Man.	1910
Younghusband, A. W.	South March, Ont.	1913
Younghusband, H. M.	South March, Ont.	1915
Younie, A. R.	Howick, Que.	1914
Zealand, H. W. A.	Port Hope, Ont.	1917
Zimmerman, E. R.	Selinsgrove, Pa.	1915
Zinck, K. D.	Lancer, Sask.	1918

AN ACT RESPECTING THE ONTARIO VETERINARY COLLEGE

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:

Short title.

1. This Act may be cited as "The Veterinary College Act."

Ontario Veterinary College, continued.

2. The Ontario Veterinary College heretofore established in the City of Toronto and conducted by the Ontario Veterinary College, Limited, under Letters Patent issued under the Joint Stock Companies' Act, and to which certain powers were given by the former Agriculture and Arts Association, is hereby continued as The Ontario Veterinary College, under the direction of the Minister of Agriculture.

Appliances and equipment of College.

3. The said College shall be furnished with all such appliances and equipment as may be necessary for theoretical and practical training in the science and art of veterinary medicine, and in such other branches of education as may be requisite for the intelligent and successful performance of the business of a veterinary surgeon.

Principal and officers.

4. The Lieutenant-Governor in Council may appoint a Principal, a Principal Emeritus, and such professors, lecturers and instructors as may be deemed necessary for giving instruction in the College and the promotion of its usefulness, and may pass by-laws regulating and prescribing their respective duties.

Substitution of courses in Agricultural College, etc.

5. The Lieutenant-Governor in Council may authorize the making of arrangements whereby instruction in any of the subjects prescribed to be taught in the College may be provided by the University of Toronto or by the Ontario Agricultural College, or by any other College affiliated with the University of Toronto.

Government and control of College.

6. The government of the College shall be under and according to such rules and regulations as the Lieutenant-Governor in Council may from time to time prescribe, and such rules and regulations shall contain provisions for the standard and mode of admission; the course of study; the fees to be charged; the sessions, terms and vacations; and such provisions as may be deemed expedient touching the conduct of students.

Rights and standing of graduates.

7. Every student upon the successful completion of the course of study, upon passing the prescribed examinations, and upon satisfactory compliance with the rules and regulations of the College, shall be admitted to the standing of a Veterinary Surgeon and shall have all the privileges and rights accorded by statute to a Veterinary Surgeon, and there shall be issued to every such student a diploma granting him the title, degree and standing of Veterinary Surgeon, such diploma to be attested by the signature of the Principal of the College and the Minister of Agriculture.

Application of ss. 1.

(2) Subsection 1 shall apply only to such students as may have registered prior to November 1st, 1916;

Qualification for degree of B.V. Sc.

(3) Every student registering after said date shall, upon the successful completion of the course of study, and upon passing the prescribed examinations, and upon satisfactory compliance with the rules and regulations of the college, be granted a diploma by the University of Toronto, conferring the title and degree B.V.Sc., the possession of which shall admit him to all the privileges, rights and standing of a Bachelor of Veterinary Science.

Issue of duplicate diploma in certain cases.

8. The Lieutenant-Governor in Council may by order make provisions whereby in case of the loss or destruction of any diploma issued by the former Agriculture and Arts Association, the former Ontario Veterinary College, Limited, or by the Minister of Agriculture, a duplicate diploma may be issued to the person entitled to the same.

Accepting gifts, etc., on behalf of College.

9. It shall be lawful for the Lieutenant-Governor in Council in behalf of the Province to accept, hold and enjoy any gifts, bequests or devises of personal or real property or effects which any person or any government may think fit to make for the purpose of the said College.

Advisory Board.

10. The Lieutenant-Governor in Council may, if deemed advisable, appoint an Advisory Board to advise and assist the Minister of Agriculture in the management of the College, and may by Order-in-Council prescribe its duties and powers and the amounts to be allowed for the services and expenses of the members of such Board.

Affiliation with University of Toronto, continued.

11. The affiliation of the College with the University of Toronto is hereby continued, such affiliation to be only to the extent of enabling the students of the said College to obtain at the examinations of the University such rewards, honors, standing, scholarships, diplomas and degrees in Veterinary Science as the University under its statutes and the Acts of the Legislature in that behalf may be allowed to confer.

Annual report of Principal.

12. The Principal of the College shall at the close of each year present to the Minister of Agriculture a report upon the work of the College in such form as the Minister may approve, setting forth the staff, the course of instruction, the students in attendance, the examination results, the income and expenditure, and such general information as shall show the work being done, and this report shall be laid before the Legislative Assembly within the first thirty days of the session next ensuing.

Power to purchase or lease lands, etc.

13. The Lieutenant-Governor in Council may purchase or acquire or lease such buildings and premises as may from time to time be required for carrying on the work of the College.

Lease from Andrew Smith approved.

14. The lease of the buildings and premises used by the said College from one Andrew Smith to the Minister of Agriculture, as representing His Majesty the King, and bearing date the twenty-eighth day of July, one thousand nine hundred and eight, is hereby approved.

15. No person or persons, association, company or organization other than is authorized under this Act shall, by advertisement or otherwise, use the name of the Ontario Veterinary College, and no person or persons, association, company or organization shall, by advertisement or otherwise, use any name similar or analogous to that of the Ontario Veterinary College, without first receiving the consent of the Minister of Agriculture in writing.

Penalty.

(*a*) Any person violating the provisions of this section shall, upon conviction thereof, be subject to a fine not exceeding $50 and in default of payment thereof be liable to imprisonment for not less than thirty days.

Rev. Stat. c. 18.

16. Section 1 of *The Act respecting Veterinary Surgeons,* is hereby repealed.

Announcement

SCHOOL OF DENTISTRY

Royal College of Dental Surgeons

DENTAL DEPARTMENT

University of Toronto

Royal College of Dental Surgeons of Ontario

CALENDAR—SESSION 1919-1920

1919

September 19th, 20th, 22nd—
Supplemental Examinations.
Registration of all Students, 10 a.m. to 1 p.m.

September 23rd—
Regular work of the Session in all classes commences at 8.30 a.m.

Thanksgiving Day, building closed.

Christmas Term Examinations. (Dates to be fixed by Faculty Council).

Christmas Vacation. Same as University of Toronto.

1920

January—
Midwinter Examinations during meeting of American Institute of Dental Teachers.

Easter Vacation. Building closed Good Friday, Saturday, and Easter Monday.

May 3rd to 8th—
Annual Examinations.

May 10th—
Meeting of Board of Directors.

For Further Information Address;

WALLACE SECCOMBE, D.D.S., Superintendent

Royal College of Dental Surgeons of Ontario

College and Huron Streets - - Toronto

MAIN CORRIDOR AND STAIRWAY

SHOWING THE
J. B. WILLMOTT, MEMORIAL WINDOW
IN THE BACKGROUND.

Our Honored Dead

GRADUATES.

Major P. P. Ballachey,
Major C. E. Sale.
Captain S. G. Alderson.
Captain R. M. Burgess.
Captain J. R. Duff.
Captain W. T. Hackett.
Captain W. J. McLean.
Captain W. G. MacNevin.
Captain H. P. Thompson.
Lieutenant F. A. Ballachey.
Lieutenant J. C. Barker.
Lieutenant A. R. Leggo.
Lieutenant H. J. McLaurin.
Lieutenant J. G. Roberts.
Sergeant L. S. Smith.
Private A. P. Bowes.

UNDERGRADUATES.

Lieutenant F. A. Cash.
Lieutenant F. N. Cluff.
Lieutenant W. J. Cooper.
Lieutenant R. B. McGuire.
Lieutenant R. J. Marion.
Gunner O. G. Dalrymple.
Gunner J. G. Larmour.
Private H. Greenwood.
Private I. C. Mallough.
Private C. C. Ramage.

Dentistry and the Science of Health.

BOTH Dentistry and Medicine are important and essential branches of the great Science of Health. As the national and economic value of the individual citizen is becoming more and more recognized and appreciated, increased importance is attached to all matters relating to public and individual health. Dentistry at one time was considered as something entirely apart from the question of health. To-day, however, the public generally have come to realize that in a great many cases the teeth are vitally associated with conditions of health and systemic disease. Science and practice have combined to prove conclusively that in the maintainance of bodily health, comfort, and appearance, no other single factor is so important as that of the teeth.

Dr. Mayo has stated that in his judgment 90 per cent. of all deaths are caused by infection; while another noted authority, Dr. Rosenow, claims that 90 per cent. of all infection enters the system above the collar. A healthy mouth certainly means better general health.

Federal and Provincial Recognition.

The Federal and Provincial Governments have recognized the importance of Dentistry, and through official channels, have given Dentistry an honored place in all matters concerning public health, in both military and civil organizations. The Department of Militia and Defence organized the Canadian Army Dental Corps as a separate unit in the militia, and the members of the Corps have served the Canadian soldiers and their allies during the war with such skill and efficiency, as to bring world-wide honor and credit to Canadian Dentistry. The Department of Soldiers' Civil Re-establishment has announced the organization of a separate Dental Department, to be administered by a Director of Dental Services. The Department of Education, Province of Ontario, recently appointed a Provincial Director of Dental Inspection, to organize school dental service throughout the Province. These are but a few of the evidences of generous public recognition of the important place occupied by modern Dentistry.

Royal College of Dental Surgeons of Ontario.

THE practice of Dentistry in Canada is governed in each Province by a Provincial Dental Act. In the Province of Ontario, authority for the administration of the Dental Profession and control of the practice of Dentistry is exercised under a Legislative enactment known as "The Dentistry Act."

The corporate name of the Dental Profession in the Province is The Royal College of Dental Surgeons of Ontario, and every Licentiate, by virtue of his title, is a member of the College. The Profession was first incorporated by Statute of the Ontario Legislature in the year 1868, and exercises the dual function of **TEACHING** undergraduates and **LICENSING** candidates who pass, without condition, the final examinations of the College.

The teaching function of the College is carried on through the School of Dentistry. The School was organized in the year 1875, and has been affiliated with the University of Toronto since the year 1888.

Though the College has never received either public or private grants, its assets have grown from year to year, until they now amount to two hundred thousand dollars. The affairs of the Profession are administered as a public trust through a Board of Directors, elected biennially by Licentiates residing within the Province. The College is thus unique both in its public relationships and its democratic organization.

Building and Equipment.

The College Building is centrally located in the City of Toronto, at the corner of College and Huron Streets, and well within the University and Hospital districts.

The equipment, fittings and scientific apparatus are of the most modern type. A special feature of the College is thoroughly equipped Prosthetic and Operative Dentistry laboratories for each of the four classes. There are also modern laboratories for teaching Chemistry, Metallurgy, Histology, Bacteriology, Pathology, and Applied Dental Physics.

The Infirmary is an extensive room, covering 7,200 square feet, and lighted from the east, west, north and south. The Infirmary is furnished with pedal chairs, cabinets and fountain cuspidors. Taken as a whole, the facilities provided by the R.C.D.S. for teaching modern Dentistry, with a staff of over 50 Professors, Lecturers and Instructors, are not excelled anywhere.

During the past Session there were in attendance 484 students, representing practically all of the nine Provinces of Canada. There were also students in attendance from India and the United States of America.

New Building.

Building operations are now proceeding, which will add 9,700 square feet of floor spare to the present building. This extension will be ready for occupation Session 1919-20, and along with the present College building, which is being completely renovated, will supply ample accommodation for 500 students.

Royal College of Dental Surgeons of Ontario.

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Anatomy—
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Applied Dental Physics—
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H. M. Lancaster, B.A.Sc., 5 Queen's Park, Toronto.

Histology—
J. S. Graham, M.B., 55 College Street, Toronto.

Bacteriology—
H. K. Box, L.D.S., D.D.S., 26 College Street, Toronto.

Medicine and Surgery—
A. E. Santo, L.D.S., D.D.S., London, Ontario.

Dental Anatomy and Comparative Dental Anatomy—
Geo. Coveyduc, L.D.S., D.D.S., 752 Dovercourt Rd., Toronto.

Prosthetic Dentistry (1st year)—
L. M. Mabee, L.D.S., D.D.S., Goderich, Ontario.

Metallurgy—
Thos. Cowling, L.D.S., D.D.S., 1 Grant Street, Toronto.

Dental Materia Medica; Pharmacology—
C. F. Walt, L.D.S., D.D.S., Sterling, Ontario.

Operative Dentistry, Pathology and Therapeutics (2nd and 3rd years)
T. F. Campbell, L.D.S., D.D.S., Galt, Ontario.

Prosthetic Dentistry (2nd and 3rd Years).—
C. C. Lumley, L.D.S., D.D.S., St. Thomas, Ontario.

Operative Dentistry (4th year)—
S. W. Bradley, M.D.S., D.D.S., Ottawa, Ontario.

Orthodontia—
C. A. Kennedy, L.D.S., D.D.S., 2 College Street, Toronto.

Prosthetic Dentistry (4th year)—
Oliver Martin, L.D.S., D.D.S., Ottawa, Ontario.

Jurisprudence and Ethics, History of Dentistry—
N. A. Powell, M.D., McCaul and College Streets, Toronto.
Fred J. Conboy, L.D.S., D.D.S., 1043 Bloor Street West.

Preventive Dentistry and Dental Economics—
F. C. Husband, L.D.S., D.D.S., 2 Bloor Street E., Toronto.

Exodontia, Anaesthesia and Analgesia—
O. A. Marshall, L.D.S., D.D.S., Belleville, Ontario.

Practical Dentistry—
The Clinical Staff.

SCHOOL OF DENTISTRY

OF THE

Royal College of Dental Surgeons of Ontario.

FACULTY.

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Associate Professor of Prosthetic Dentistry.

J. W. CORAM, L.D.S., D.D.S.,
Associate Professor Clinical Operative Dentistry.

THOMAS COWLING, L.D.S., D.D.S.,
Associate Professor of Chemistry.

A. D. A. MASON, L.D.S., D.D.S.,
Associate Professor of Operative Dentistry, Lecturer in Fractures.

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Clinician, Prosthetic Dentistry.

L. F. BOYLE, L.D.S., D.D.S.,
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Clinician, Toronto General Hospital.

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Clinician, Orthodontia.

F. C. HUSBAND, L.D.S., D.D.S.,
Clinician, Preventive Dentistry.

J. W. INGRAM, L.D.S., D.D.S.,
Patients' Examination Room.

C. A. KENNEDY, L.D.S., D.D.S.,
Clinician Orthodontia.

L. F. KRUEGER, L.D.S., D.D.S.,
Clinician, Operative Dentistry.

W. C. SMITH, L.D.S., D.D.S.,
Clinician, Operative Dentistry.

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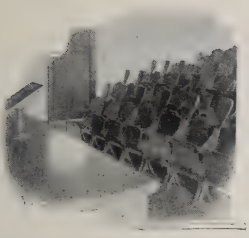
C. A. KENNEDY, L.D.S., D.D.S.

NURSES

MARY J. SPARKS, R.N. E. M. E. EAST.

UNDERGRADUATES.



THE undergraduates of the Royal College of Dental Surgeons conduct all student activities through an organization known as the Students' Parliament. Elections are held each year, and class officers and student representatives are appointed to act in the interests of the whole student body, both in local matters and in connection with the Students' Administrative Council of the University.

The class fee of $6.00 paid by each student at time of registration, is handed over by the College to the official student organizations of the College and University, and these funds are used to carry on student activities.

All University of Toronto athletic meets and games are open to the students of the Dental College, and it is hoped that those interested will keep in training, that the very excellent past record of "Dentals" in 'Varsity athletics, may be fully maintained.

The Student activities also include Literary, Social and Dental organizations.

Some years ago the students organized an orchestra, which has been continued from year to year. Students who play wind or string instruments are requested to bring them.

There is also connected with the College a Young Men's Christian Association. Added interest has been aroused by the group Bible and Mission Study system. During the opening days of the Session a Committee will be present to assist new students in every way possible. All students are requested to call at the office of the University Y. M .C. A. and obtain a Dental College handbook. Information regarding rooms and board will also be given if desired.

The City of Toronto is a world-renowned educational centre, and presents many collateral advantages to the undergraduate. In addition to the College Library, containing bound volumes of the leading dental journals and all the important dental texts, the Toronto Public Library, containing over 120,000 volumes and many historic manuscripts and documents, is within easy reach of our students, being situated in the same block as the College Building.

Board and room may be obtained convenient to the College at from $7.00 up per week.

Upon arrival in the city students are recommended to come direct to the College Building, where a list of suitable boarding places may be secured. Upon Registration each student will be provided with adequate locker accommodation.

Undergraduate Course Leading to License and Degree.

The course for undergraduates, leading to a certificate of license to practise the Profession of Dentistry in the Province of Ontario, extends over four academic sessions of seven months each, and is open to both men and women.

Through affiliation and close co-operation between this college and the University of Toronto, a common undergraduate curriculum has been adopted. The University and the Royal College of Dental Surgeons, after annual conference, appoint examiners for the combined examinations, which lead in the one case to the degree of Doctor of Dental Surgery, and in the other to the title of Licentiate

of Dental Surgery. This latter certificate is the only legal qualification for the practice of Dentistry in the Province of Ontario, and graduation from the Royal College of Dental Surgeons entitles the candidate to such certificate without further examination.

ENTRANCE REQUIREMENTS.

Since the establishment of the University Matriculation Board in 1908, neither the University of Toronto nor the Royal College of Dental Surgeons conducts a matriculation examination. A candidate for admission to the course in Dentistry will be entitled to the status of an undergraduate who possesses either of the following qualifications:—

1. A certificate issued by the Ontario University Matriculation Board, of standing as for Junior Matriculation in the subjects of English, History, Mathematics, Latin and Experimental Science (Physics and Chemistry).
2. A certificate of Junior Matriculation or Normal Entrance with Latin of the Province of Ontario.
3. A certificate of matriculation in the Faculty of Arts of a British or Canadian University.
4. A certificate accepted by the General Medical Council of Great Britain for registration as a student of Medicine or Dentistry.
5. A degree in Arts (not being an honorary degree) from some recognized University.

The following certificates may be accepted pro tanto for matriculation:—

Ontario—Normal entrance and entrance to the Faculties of Education as well as certificates of the same standards under titles no longer in use.

Prince Edward Island—First or Second Class Teacher's License of Prince Edward Island. Honour, First or Second Class ordinary Diplomas, as issued by the Prince of Wales College, P.E.I.

Nova Scotia—Teacher's License, Grade A, or B, or Grade A or B Leaving Certificate issued by the Council of Public Instruction.

New Brunswick—Superior and Grammar School Teachers' Licenses, also Normal Entrance Certificates of the First and Second Class.

Quebec—Associate in Arts.

Manitoba—First or Second Class Teachers.

Saskatchewan—First or Second Class Teachers.

Alberta—Grade 11 or 12.

British Columbia—Intermediate or Senior Grade.

A certificate of standing as an unconditioned student of a University in the United States, may be accepted, but it must be on the basis of a complete four years' course in a High School accredited by the said University. Such a certificate must include Latin for at least two years.

Certificates other than those previously mentioned will be considered in determining the status of applicants as undergraduates.

Candidate must meet all requirements before registration.

Conditions and time of holding Regular or Supplemental Matriculation examinations may be ascertained by correspondence with the Registrars of the several Universities, or in Ontario, with the Secretary of the University Matriculation Board, Parliament Buildings, Toronto.

PHYSICS AND CHEMISTRY.

In all cases where Physics and Chemistry are optional, the candidate is recommended to include these subjects in his preliminary studies. A knowledge of the science subjects is essential, and undergraduates who have not obtained at least Arts Matriculation standing in Physics and Chemistry, will be required to take special instruction in these subjects during the opening weeks of the Dental Course. The fee will be $5.00 in each subject.

REGISTRATION.

The Superintendent will be in attendance to examine Matriculation credentials and register students between the hours of 10 and 1, on Friday, Saturday, and Monday, the 19th, 20th, and 22nd of September, 1919.

All students are required to register in person during these hours, and will not be admitted at a later date, without satisfactory excuse and the written consent of the President. Late registrants will in every case be penalized.

All fees are payable at time of registration.

Students proceeding to the degree of Doctor of Dental Surgery are required to register their Matriculation credentials, both at the Royal College of Dental Surgeons and in the Dental Department of the University. The fee in each case is $5.00.

STUDENTS' APPLICATION.

All undergraduates are required to sign the following application form:—

To the Royal College of Dental Surgeons of Ontario
and the University of Toronto.

Gentlemen,

I am desirous of entering upon the Study of Dentistry, under the provisions of the law respecting Dentistry in Ontario.

Should I be admitted as a Student of Dentistry, it is with the distinct understanding:

1st—That I will comply with the requirements of the R.C.D.S., respecting Matriculation and Pupilage and Payment of Fees.

2nd—That it is my present intention to complete the full course of study in the School of Dentistry of the R.C.D.S. of Ontario.

3rd—That in pursuing this Study, I will attend regularly all prescribed didactic, laboratory and infirmary instruction in each of the several years, and will give diligent attention to the work required of me.

4th—That during my course I will loyally conform to the requirements of the Act respecting Dentistry, and of the By-Laws, Rules and Regulations prescribed from time to time by the Directors of the College and the Faculty Council of the School as necessary to secure needful order and discipline in the interests of the whole student body.

5th—That I will endeavor at all times to promote good fellowship among my class mates, and to maintain and protect the reputation of my Alma Mater.

6th—That when authorized to practice Dentistry, I will conduct my practice ethically, and will make all reasonable efforts to elevate the Profession of Dentistry and maintain its dignity and good name.

7th—I hereby agree to be registered on probation, and will withdraw upon request should the Faculty Council determine such a course advisable.

8th—It is also clearly understood by me that, in the acceptance of students, preference will be given to those whose preliminary certificates included the subjects of Chemistry and Physics, and that those who have not taken these subjects will be registered tentatively, and permitted to proceed, providing there be sufficient accommodation. All such hereby agree to take a special preliminary course in these subjects—fee $5.00 for each subject.

Fees—Royal College of Dental Surgeons.

Undergraduates.

Registration of Matriculation Certificate Fee, payable once, at time of registration	$ 5.00
Lecture Fee, payable each session	155.00
To all students registering in person promptly upon the regular registration days	150.00
Lecture Fee for those who repeat a session	75.00
Deposit Fee, payable each session, for making good unnecessary loss to the property of the College. Any charges or fines are deducted and balance returned to student at close of session	5.00
Class Fee—Admitting to privileges of all the student organizations of the College and to the privilege of the Students' Council of the University of Toronto	6 00
Practical Anatomy Fee—(Sophomore Year only) $20.00, payable to the Bursar of the University. Upon presentation at the College Office of a certificate of having successfully completed the Anatomy course, $10.00 of this amount will be repaid to the student by the R. C. D. S.	10.00
Hospital Fee—(Senior Year only)	3.00
Fee for each annual examination	10.00
Final examination fee for those who have not paid annual txamination fees $40.00. A rebate of $10.00 will be allowed for each annual examination fee previously paid.	
Supplemental Examination Fee for each paper (the total not to exceed the regular examination fee for one year)	5.00
Supplemental Term Examination Fee	3.00
All fees for instruction are payable at time of registration. Six per cent. interest charged on overdue fees.	

Graduates.

For examination for Title of Master of Dental Surgery, $20.00.

Special Examination Fee for graduates of other dental colleges: (A) Citizens of Ontario, after four years' practice, $190.00; (B) Not citizens of Ontario, $250.00.

Registration of Dominion Dental Council Certificate, $50.00.

Fees—University of Toronto.

The following fees are payable to the Bursar of the University of Toronto.

Registration of Matriculation Certificate Fee	$ 5.00
For each annual examination (four)	5.00
Supplemental examination for each paper (maximum $10.00)	5.00
For Degree of Doctor of Dental Surgery	10.00

Forty-Sixth Session

OF THE

Royal College of Dental Surgeons of Ontario

THE 46th Session of the School of Dentistry will commence on Monday, the 22nd of September, 1919, at 5 p.m., when the Dean will meet the members of the Freshman Class.

The regular work of the Session, in all Classes, will commence at 8.30 a.m. on Tuesday, the 23rd of September, 1919. Time-table for Lectures and Laboratories will be posted at time of registration.

The members of the Faculty are engaged in College work primarily because of the service they are able to render, and it will be their pleasure to assist the students in every way possible. It is hoped that students will avail themselves of every opportunity for conference with the members of the staff, that there may be developed the greatest possible co-operation, sympathy and friendship, among all those within the College walls.

CURRICULUM—SESSION 1919-20.

Freshman Year.

Lectures—Inorganic Chemistry, Osteology, Dental Anatomy, Comparative Dental Anatomy, Histology, Embryology, Biology, Prosthetic Dentistry, Physiology, Applied Dental Physics.

Laboratory—Dental Anatomy, Histology, Prosthetic Dentistry, Applied Dental Physics.

Sophomore Year.

Lectures—Organic and Physiological Chemistry, Anatomy, Physiology, Materia Medica, Elementary Bacteriology, Operative Dentistry, Prosthetic Dentistry, Crown and Bridge, Special Histology.

Laboratory—Dissection, Inorganic, Organic and Physiological Chemistry, Operative Dentistry, Prosthetic Dentistry, Crown and Bridge, Physiology.

Junior Year.

Lectures—Bacteriology and Pathology, Pharmacology, Anaesthetics, Exodontia, Operative Dentistry, Preventive Dentistry, Orthodontia, Prosthetic Dentistry, Metallurgy, Crown and Bridge, Dental Economics, Applied Dental Physics.

Laboratory—Applied Dental Physics, Bacteriology and Pathology, Metallurgy, Operative Dentistry, Prosthetic Dentistry, Crown and Bridge, Orthodontia, Infirmary, Exodontia.

Senior Year.

Lectures—Medicine, Surgery, History of Dentistry, Ethics, Dental Jurisprudence, Electro-Therapeutics, Dental Pathology, Orthodontia, Operative Dentistry, Prosthetic Dentistry, Crown and Bridge, Preventive Dentistry, Dental Economics, Exodontia, Anaesthesia and Analgesia, Peridontia.

Laboratory—Exodontia, Infirmary, Pathology, Operative Dentistry, Prosthetic Dentistry, Crown and Bridge, Orthdontia, Minor Surgery, Medicine and Surgery (General Hospital).

BOOKLET OF INFORMATION.

At time of registration, each student will be handed a booklet containing needful information regarding regulations, details of Course, attendance, credits, examination requirements, and official list of instruments and equipment required by each student.

With the exception of Extracting Instruments, Lathes and Vulcanizers, students furnish their own instruments and appliances for both Laboratory and Operating room.

Freshmen and Sophomores who have not already obtained an outfit, must come prepared to expend, approximately, during the first week, for appliances and instruments: Freshmen $100, Sophomores $250. Students in their own interest and that of their classmates will not be permitted to enter the classes without being properly equipped for work. The approximate cost of text books is: Freshmen $22, Sophomores $27, Juniors $15, and Seniors $15.

EXTENSION OF INFIRMARY COURSE AND INDENTURESHIP.

Students who at the close of any regular session are found by the Clinical Staff to be deficient in Infirmary practice, will be required to attend a supplemental Clinical Course. For this purpose the Infirmary will remain open for two complete weeks following the close of the annual examinations, and re-open two weeks previous to the supplemental examinations in the Fall. At the discretion of the Faculty Council, a student who has been conditioned in clinical work may be required to attend either or both of these sessions

Junior students who are conditioned in clinical work may, in lieu of such Infirmary Course, sign indentures with a licentiate of Dental Surgery, and upon return to College present a written statement from the preceptor certifying to at least 10 weeks (exclusive of holidays) of satisfactory service in the practitioner's office.

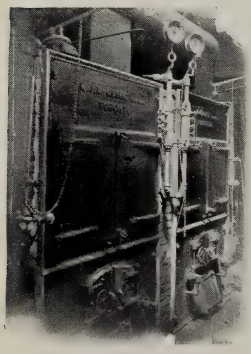
SPECIAL STUDENTS.

Students of Dentistry not desiring to qualify for practice in the Province of Ontario are entered on the register as "Special Students." These may avail themselves of all the privileges of the School of Dentistry of the R C.D.S., but will not be accorded academic standing.

ADVANCED STANDING.

Students from recognized Dental Colleges are admitted to advanced standing in the R.C.D.S. upon matriculation in the Royal College of Dental Surgeons, presentation of official credentials of standing, and payment of regular fees.

GRADUATES IN ARTS, SCIENCE OR MEDICINE.



A special three-year course is offered graduates in Arts or Science or Medicine of recognized Universities.

Concurrent Course in Medicine and Dentistry.

The R.C.D.S. has arranged with the University of Toronto for a concurrent course in Dentistry and Medicine.

The first four years are devoted to the primary division of the Medical Course and the whole of the Dental Course, except Medicine and Surgery. The following years (two or three, as may be necessary) are devoted to the completion of the Course in Medicine. Upon Graduation the student will

receive from the R.C.D.S. the certificate conferring the L.D.S. and from the University the Degrees of M.B. and D.D.S.

Concurrent Course in Dentistry and Arts.

The College authorities are endeavoring to arrange with the University of Toronto for a concurrent course in Arts and Dentistry. Particulars of this course will be announced later.

RIGHTS OF UNDERGRADUATES.

A matriculated student, who has attended at least one session of the School of Dentistry of the R.C.D.S., and who desires, during any of the intervals between College sessions, to act as assistant in the office of an ethical Dental Practitioner in Ontario, may place himself under the protection of the law by signing an agreement in the form approved by the Board and fyling a copy with the Superintendent. Upon application the Superintendent will furnish students with blank forms for this purpose. Such agreements cover a period of five months only, and may be renewed, providing the applicant has attended College during the previous Session.

Students are reminded that signing an agreement with an L.D.S. gives them no legal right to perform dental operations elsewhere than under the immediate personal supervision of their preceptor or other licentiate. See sub-section 1 and 3 of Sec. 25, of the Dentistry Act.

The primary object of the Dentistry Act is to protect the public from unqualified practitioners. Students are not qualified practitioners and are not permitted to conduct branch offices, or to perform dental operations elsewhere than in the head office of their preceptor.

REQUIREMENTS FOR GRADUATION.

To be of the full age of twenty-one years.

To be of good moral character.

To have complied with the regulations of the Royal College of Dental Surgeons respecting Matriculation.

To have attended four full Courses of Lectures in the School of Dentistry of the R.C.D.S., except in the case of students who have been admitted to advanced standing from other Colleges or Universities.

To have completed all practical work in accordance with the rules and regulations of the School, paid all fees, fyled the required application and statutory declaration, and passed satisfactorily all examinations prescribed by the Board of Directors and the University of Toronto.

DOMINION DENTAL COUNCIL OF CANADA.

In each of the Provinces of the Dominion of Canada, the Legislature has enacted legislation regulating the practice of Dentistry, and in each Province the Dental Act provides for a Corporate Body, which grants license to practise Dentistry in the Province. About ten years ago representatives from each of the Dental Corporate Bodies of the nine Provinces of the Dominion met to discuss the feasibility of formulating a curriculum in Dentistry, holding an examination and issuing a certificate of qualification, which would

admit the holder, without further examination, to registration in any, or all, of the Provinces entering into the agreement on payment of the local registration fee. Eight of the nine Provinces have entered into such an agreement and have formed a Dominion Dental Council, composed of a duly elected representative from each of the Dental Corporate Bodies entering into the agreement. The certificate of the Dominion Dental Council will admit the holder to registration, on payment of the local registration fee, in the Province of Prince Edward Island, Nova Scotia, New Brunswick, Ontario, Manitoba, Saskatchewan, Alberta, and British Columbia. The preliminary education which is accepted is the Junior Matriculation of the Education Department of Ontario or Matriculation in the Faculty of Arts of a Provincial University or a certificate that will be accepted for registration by the General Medical Council of Great Britain. Young men preparing to enter upon the study of Dentistry in Canada are strongly advised to take the Dominion Dental Council Examinations. Provision is made permitting students attending colleges within agreeing provinces to write the D.D.C. Examinations from year to year, as they complete the subjects during the progress of their College course. A pamphlet containing full information concerning matriculation and examination standards of the Dominion Dental Council will be sent on application to Dr. W. D. Cowan, Secretary, Dominion Dental Council, Regina, Sask.

A corner in the Bacteriological Laboratory.

Students in Attendance—Session 1918-19.

FRESHMAN CLASS.

Armstrong, Harold George
Armstrong, Vincent
Atkinson, George Fred
Balfour, George Edward
Bedell, Wilson
Bell, Geoffrey Walter
Berry, John Oswald
Boyle, Earl Robert
Braund, Stanley
Brewer, John Melvin
Brill, Irving Thomson
Brown, Stanley
Burrell, Hilbert Lorne
Bussey, Cyril Victor
Caldbick, Laverne Ward
Carter, Lorne
Clark, Byron James
Collins, Charles Cyril
Conboy, James Harold
Cooper, Wilfred Ernest
Coupland, Douglas Charles
Craig, Wilfrid Maitland
Culver, Lee Franklin
Cummer, Harold Howard
Curran, Fenwick Elwood
Davidson, Arthur G.
Davidson, Harold Thornton
Davis, Roy Norman
Devine, Evan Wellington
Dewey, Jack Hobbs
Dietrich, Joseph Antony
Dickson, Joseph Leslie
Dixon, Harold William
Dodds, Lee Ralph
Donnelly, John Bellamy
Dunlop, Robert
Evans, James DeLacy
Fahey, Harold Joseph
Feinberg, Joseph
Freele, Roy S.
Galloway, William Henry
Garfinkle, Ben.
Gilbert, William James
Gillies, John Archie
Gray, Willard Alexander
Greaves, Samuel Philp
Griss, Jack
Hall, Henry Richard
Hamilton, Clarence Wm.
Hancock, William George
Harrington, Paul
Harris, John Stafford
Harris, Ralph Gordon
Harvie, Hugh George
Heidgerken, George
Heisz, George Marten
Holmes, Aubrey Stuart
Holmes, LeRoy Hibbard
Hudgins, Ronald Ransier
Hudson, Louis
Jackson William Richard
James, Elda Muriel
Jaques, Loyd A.
Joy, Marion
Katrak, Shiavux Naoroji
Kerr, Grenville A.
Kerr, William James
Keyes, Eugene Charles
Lamond, William Nelson
Landsberg, Harry
Lane, Abraham Charles
Langmaid, Wesley John
Law, Martha E.
Lee, John Marsh
Long, George Wilfred
Lyons, Clive Walters
Mallory, Dwight H.
Marshall, Robert John
Martin, Gerald M.
Maynes, Douglas
Metcalfe, Ivan Joshua
Mollins, Florence Norma
Moulson, Harry
McCormack, James A.
McDonagh, Josephine Aileen
McDonald, Percy Ellicott
McEwen, Alma
McKibbon, George Louis
McMulkin, John Edward
O'Brien, Emmett Joseph
Okun Charles
Osher, C. H.
Percival, Harold Slack
Perlman, Louis
Porter, John Frederick
Prestien, Gordon Lee
Reid, Robert George
Renton, John Elliott
Reynolds, William Reginald
Rosen, Samuel
Rouse, Dermot
Rupert, Ernest Arthur
Ryan, Chas. Jas. Kingston
Sharon, William Alexander
Sharpe, Lionel
Shields, Robert Alexander
Shragge, Gerald Emanuel
Shultis, John Muir
Simon, Saul
Smith, James Walker
Smoller, Morris
Snelgrove, Cecil Merritt
Snell, Albert Robert John
Soules, Charles Wendell
Sproul, Frank E.
Stevenson, Willard Mackay
Turner, Dwight Mason
Tyson, Walter Bowman
Underhill, Eugene
Van Allen, Douglas S.
Virtue, Reid McDonald
Ward, Roy Miles Elbert
Webb, Milton Edward
Wilkinson, John McLeod
Willinsky, Bernard
Wilson, Murray Robert
Yack, Leo Clarence
Yoerger, Wilfred G.

SOPHOMORE CLASS.

Abar, Harry Smith
Adams, Harold
Adams, Russel Bertram
Agnew, Robert Gordon
Akins, Samuel Clements
Anderson, Herbert Ross
Armstrong, William Joseph
Asselstine, Curtiss Willie
Barber, Ida Miriam
Barnes, Adolphus Fred'ck
Barnes, Leslie Vernon
Beattie, Newell
Beckett, Russell James
Bell, John Wycliffe
Best, James Harold
Black, William Blair
Bradley, Alva Ogle
Broadworth, Robert T.
Bryans, Harvey Samuel
Butler, John Arthur
Calbeck, Arnim George
Cameron, Alvin Alexander
Campbell, Ellsworth T.
Clark, Wilfrid Daniel
Corbett, Fred Minto
Coughlin, Leo Michael
Coyne, John Thomas
Dales, A. F.
Daly, Arthur
Danahy James Alexander
Davidson, Benjamin
Derbyshire, Aubrey Oscar
Dinniwell, Richard Ernest
Dobbs, Eric Raymond
Douglas, Norman Stewart
Duff, John Carl
Elliot, Cyril Augustus
Faulkner, Wilbur Joseph
Foster, Bruce David
Freitag, Herbert Alfred
Garfat, Earl
Garvey, Leo Richard
Gott, Adlington
Graham, Foster Melville
Grahame, John McIntosh (special).
Granovsky, Tevia Leil
Haines, Clifford Albert
Halladay, Guy Burton
Harper, Howard
Hilliker, Arthur Ellwood
Hoar, Howard Blair
Hogan, Marrin James
Howson, George William
Hunter, William Harold
Hyde, Russell George
Irwin, James Erle
James, Christopher Norman
Jewitt, George Gladstone
Johnston, Grant

Johnston, Robert Edison
Jones, Unsworth N.
Kerr, Arnold Roy
Killoran, Martin
King, John Amassa
Kinsman, Margaret A.
Laidley, Clifford H. M.
Letellier, Leon Alphonse
Lumb, John Crother
Marshall, Earl
Marshall, Thomas Robb
Martin, Lawrence Melville
Millen, Gordon James
Mills, Raymon Judd
McAllister, Marguerite R.
McClure, Fred D.
McCool, Leonard Hugh
McCutcheon, Robt. Clifford
Macdonald, Allan Brown
McFeetors, Henry Earle
McGowan, James Cooney
McIntosh, Duncan
McKee, Godfrey Gilford
McLean, William Franklin
McLeod, John Murray
McLister, James Carl
McMullen, James Ewart
McQueen, Robert Allan
Olson, Johannes O.
Partlo, John Moulton
Paul, Gordon Scarborough
Pratt, Mack Lancelot
Robb, William James
Roberts, Joseph Floyd
Robinson, Thomas Albert
Robinson, Robert Wm. H.
Rochon, Rene
Rogers, John Lee
Rowsome, Clarence M.
Ryan, Lawrence Nicholson
Smart, Clarence C.
Snell, George Hillman
Sockett, Richard James
Spellman, Joseph Alexis
Steele, Charles Wellington
Stewart, Charles Graham
Taylor, Cecil Joseph
Upton, Eber Rowles
Wagner, George William
Warnica, John Frederick
Watson, Douglas A.
Whyte, James Patterson
Wilkey, W. J.
Wilson, Charles Beresford
Wilson, Percy R.
Windrim, Harold Lincoln
Wood, Charles Douglas
Woods, Russell Gilbert
Zimmerman, James

JUNIOR CLASS.

Avery, Clarence Hambly
Babcock, Frederick Ernest
Backus, Arthur A.
Bartholomew, John Wesley
Beach, Fay Ward
Bell, Lorne Russell
Ben-Ezra, Isaac M.
Blakely, Wm. MacDowell
Blancher, Kenneth Albert
Box, Willard McConnell
Bradley, Randolph W.
Bregman, Benjamin
Brown, Hubert Mark
Brownlee, Harold Graham
Butler, Ronald Ford
Buttery, Gordon A.
Caulfield, Howard John
Charles, Burwell James
Churchill, Samuel Herbert (special).
Clark, Alexander McCoy
Clark, Victor A.
Clermont, Charles C.
Cooper, Albert Fitzgerald
Countryman, Jacob Grant
Courville, Clifford Arthur
Croft, Lloyd Henry
Davidson, Harry
Day, Harry Roy
Dean, Robert Alexander
Dupuis, L. F.
Durant, W. Lorne
Eckel, Harvey Walter
Ewert, William
Farrell, Vance Ronald
Fralick, Royal Foster
Fraser, James Ernest
Frawley, Gordon Leigh
Freestone, Roy W.
Garbutt, Herbert Reuben
Gemeroy, George Alex.
Giffen, James Franklin
Gilbert, Cecil S.
Golding, James William
Gollop, Fred Gladstone
Grace, Archibald Wm.
Graham, John Alexander
Green, John Carruthers
Gunton, Claude
Hartley, Monte William
Haryett, Rowland Emerson
Haynes, Nelson Willard
Herrington, James Herd
Hesson, Edgar John
Hicks, Elgin Donley
Hillis, Roland
Himelstein, Isaac Lazarus
Hiscox, Robert James
Holmes, Wendell Thomas
Hughes, Percy Cooper
Irwin, Joseph T.
Johnson, Leo Arthur
Joynt, George
Kelley, Charles Joseph
Kemp, Stanley Whitehouse
Lajoie, Edward T.
Lally, Joseph Vincent
Lapp, John Stanley
Leach, Howard Whitfield
Long, Victor Carman
Lundy, Benjamin
Mahoney, Carl Joseph
Mayer, Max Abe
Milburn, Sidney Albert
Miller, Lloyd James
Miller, Wm. Jas. Henry
Mitchell, Wallace Barrett
Model, Samuel
Morgan, Charles Elgin
Morgan, George Syrian
Morrison, James Douglas
Morton, Gerald A.
Moss, Samuel I.
Moyle, Carl Thomas
Murphy, Nicholas James
McBride, Erle Stanley
McCrostie, Hugh
McKee, George Humphreys
McLachlan, James Duncan
McLachlan, John Reginald
MacLachlan, Lorne Edgar
McLaughlin, Robert C.
McLean Charles Alexander
McLeod, William Donald
McNichol, Peter Hamilton
McVicar, Kenneth Neil
O'Connor, George
Oldham, George Elliott
Palmer, Andrew Murray
Pommer, William Albert
Perdue, Garnet
Pollock, George
Race, Wilfred Watson
Reid, Ernest Andrew
Richardson, Wm. Randall
Ross, Hugh Alexander
Rubenstein, Jake
Sadleir, Ernest Arthur
Seymour, William Melville
Shaunessy, John Orchard
Snider, Norman Wray
Speer, Victor Douglas
Speers, William Wallace
Spence, William Adams
Steele, Robert Brown
Strath, John Herbert
Taylor, Harold Dixon
Teich, Joseph
Voaden, Wendell Wycliffe
Walker, George Thomas
Walroth, Ernest John
Walton, Arthur Harold
Warren, Edward M.
Weese, Frank Adolphus
Wilson, Arthur H.
Wessels, Wyman Ernest
Winn, Norman D.
Winn, Robin E.
Wintrope, Louis Max

SENIOR CLASS.

Aitken, Elmer S.
Alston, Walter George
Barkley, Waldo Keith
Barnby, Alex. E.
Bean, Harvey G.
Bebee, Milton Clarence G.
Bishop, Russel
Blandin, Murray Howard
Carrothers, Eldon T.
Chegwin, Arthur Edward
Clemence, Thomas Carlyle
Couture, Aime
Crouch, Stanley Stuart
Daryaw, Chauncey
Des Rosiers, Raoul L.
Dickson, John Harrison
Dickson, Stanley Rodgers
Dodge, Gordon

Drew-Brook, Lawrence D.
Ferguson, Duncan J.
Flett, Donald Muir
Foley, Claude James
Fraser, Luke Gardiner
Gardner, Albert Victor
Godwin, W. Orville
Gravel, Lucien
Hall, Ralph Watson
Hart, Robert Alexander
Hartford, Harold Anthony
Hayes, William Norbert
Hoag, Harold William
Holmes, Edward West
Hord, Alvin Merwyn
Hotham, Richard Ivan
Hugill, Wilson La Verne
Johnson, Wallace Milbert
Johnston, Harold
Jones, Alun Wynn
Klopp, Hubert Fred
Laidlaw, A. N.
Lamey, Martin Patrick
Lavine, Julius Judah
Levesque, George Honare
Mackle, John Lawson
Millan, Rupert Paul
Milne, James Allan
Mitchell, George Fleming
Montgomery, Jas. Graham
Moore, Stephen Alva
Morton, Joseph Francis
Moyer, Charles Edward
Murray, Gordon Sutherland
Murray, William
McCann, Herbert John
McGowan, John Lawrence
McKay, William Morton
MacLaurin, J. C.
McLeod, Samuel M.
MacPhee, Alex. Archibald
Norton, Alban Lawrence
Oke, Charles Rayward
O'Leary, Edward Joseph
Ott, Benjamin Myril
Pickard, Jack Whitton
Poag, Arthur Reginald
Poyntz, Arthur
Quigley, Norman Joseph
Richardson, Samuel Marsh
Roach, Herbert Charles
Robinson, Earl John
Russell, Colin T.
Saunders, H. A.
Sawyers, Walter Lindsay
Shannon, George Lugsdin
Shortreed, Roy Dawson
Sirrs, George A.
Slone, Abram
Smith, Earl Phillips
Smith, William Harry
Smyth, Wilson Dunn
Staples, Louis William
Stewart, Charles Elmer
Stewart, James Lloyd
Watson, Raymond Melville
Wood, Arthur Dobson
Wright, Roy Arthur

During the recent war, the Military duty of constructing artificial noses, eyes, ears, and their surrounding tissues, in addition to that of artificial teeth for wounded soldiers, has been discharged by the dental profession. The Canadian Army Dental Corps has utilized a part of the building and facilities of the R.C.D.S. in carrying on this duty for the past year. Above:—A teaching exhibit for this important branch of dental services.

Results of Annual Examinations

FIRST YEAR—SESSION 1918-19.

The Following Students have Completed the Subjects of the First Year, in order of merit.

Cummer, H. H.
Bell, G. W.
Coupland, D. C.
Ward, R. M. E.
Galloway, W. H.
Berry, J. O.
Yack, L. C.
Garfinkle, B.
Dietrich, J. A.
Brewer, J. M.
Heidgerken, G.
Donnelly, J. B.
Fahey, H. J.
Freele, Roy S.
Rupert, E. A.
Marshall, R. J.
Snelgrove, C. M.
Burrell, H. L.
Dewey, J. H.
Harris, J. S.
Landsberg, H.
McMulkin, J. E.
Balfour, G. E.
Feinberg, J.
Davidson, A. G.
O'Brien, E. J.
Turner, D. M.
Dunlop, R.
Yoerger, W. G.
Davidson, H. T.
Lee, J. M.
Hall, H. R.
Harvie, H. G.
Dickson, J. L.
Mallory, D. H.
Hudgins, R. R.
Metcalfe, I. J.
Soules, C. W.
Smoller, M.
Braund, S.
Rouse, D.
Holmes, A. S.
Stevenson, W. M.
Jackson, W. R.
Lyons, C. W.
Kerr, W. J.
Culver, L. F.
Dixon, H. W.
Martin, G. M.
Sharon, W. A.
Hancock, W. G.
Webb, M. E.
Willinsky, B.
Jaques, L. A.
Okun, Chas.
McDonald, P. E.
Law, Miss M. E.
McCormack, J. A.
Clark, B. J.
Mollins, Miss F. N.
Long, G. W.
Shragge, G. E.
Devine, E. W.
Keyes, E. C.
Joy, Miss M.
Davis, R. N.
Langmaid, W. J.
Katrak, S. N.
Curran, F. E.
Percival, H. S.
Conboy, J. H.
Harris, R. G.
Shields, R. A.
Smith, J. W.
Reynolds, W. R.
Greaves, S. P.
Harrington, P.
James, Miss E. M.
Holmes, L. H.
Collins, C. C.
Gilbert, W. J.
Van Allen, D. S.
Atkinson, G. F.
Ryan, C. J. K.
McDonagh, Miss J. A.
Prestien, G. L.
Gray, W. A.
Wilkinson, J. M.
Craig, W. M.

Bussey, C. V.—Passed in Osteology, Dental Anatomy, Comparative Dental Anatomy, Prosthetic Dentistry.

Dodds, L. R.—Passed all 1st and 2nd Year papers upon which he wrote.

Moulson, H.—Passed in Histology, Dental Anatomy, Comparative Dental Anatomy, and Physiology, of the 1st Year; Materia Medica, Anatomy, Operative Dentistry, Prosthetic Dentistry, and Chemical Laboratory, of the 2nd Year.

First Year Students to Take Further Examinations or Complete Practical Work.

Armstrong, H. G.—Histology.
Armstrong, V.—Physics.
Boyle, E. R.—Osteology, Term; Histology.
Brill, I. T.—Chemistry.
Brown, S.—Chemistry, Physiology, Physics; to complete Prosthetic Technic.
Caldbick, L. W.—Physics.
Carter, L.—Histology, Physics.
Cooper, W. E.—Chemistry, Histology, Physics.
Evans, J. D.—Chemistry.
Griss, Jack—Physics.

Holmes, L. H.—To complete Comparative Dental Anatomy.
Heisz, G. M.—Chemistry; to complete Prosthetic Technic.
Kerr, G. A.—Chemistry, Histology, Physics; to complete Prosthetic Technic.
Lamond, W. N.—Prosthetic Dentistry.
Lane, A. C.—Chemistry, Histology, Physics.
McEwen, Miss A.—Chemistry, Histology.
Osher, C. H.—Histology, Physics.
Porter, J. F.—Physics.
Reid, R. G.—Prosthetic Dentistry.
Renton, J. E.—Chemistry, Physics.
Rosen, S.—Chemistry, Histology, Physics; to complete Prosthetic Technic.
Ryan, C. J. K.—To complete Prosthetic Technic.
Sharpe, L.—Chemistry.
Shultis, J. M.—Physics.
Simon, S.—Histology, Physics: to complete Prosthetic Technic.
Snell, A. R. J.—Chemistry, Histology; to complete Prosthetic Technic.
Sproul, F. E.—Chemistry.
Tyson, W. B.—Chemistry, Physics; to complete Prosthetic Technic.
Underhill, E.—Chemistry, Physics.
Virtue, R. M.—Prosthetic Dentistry.
Wilson, M. R.—Histology.

To Take Year Over.

Gillies, J. A. Maynes, D.

SECOND YEAR.

The Following Students have Completed the Subjects of the Second Year, in Order of Merit.

Cameron, A. A.	Agnew, R. G.	Best, J. H.
Marshall, T. R.	Hyde, R. G.	Derbyshire, A. O.
McKee, G. G.	Wilkey, W. J.	Dales, A. F.
Barnes, L. V.	McCutcheon, R. C.	Paul, G. S.
Asselstine, C. W.	Abar, H. S.	McLeod J. M.
Wilson, C. B.	McCool, L. H.	Lumb, J. C
Johnston, R. E.	Irwin, J. E.	Davidson, B.
Elliot, C. A.	Jewitt, G. G.	Dobbs, E. R.
Woods, R. G.	Killoran, M.	MacDonald, A. B.
Corbett, F. M.	Harper, H.	Barber, Miss I. M.
Dinniwell, R. E.	Coyne, J. T.	McQueen, R. A.
Graham, F. M.	Hilliker, A. E.	Wilson, P. R.
Whyte, J. P.	Granovsky, T. L.	Halladay, G. B.
Upton, E. R.	Zimmerman, J.	Pratt, M. L.
Steele, C. W.	Haines, C. A.	Taylor, C. J.
Smart, C. C.	Bradley, A. O.	Stewart, C. G.
Black, W. B.	Gott, A.	Johnston, G.
Windrim, H. L.	Adams, H.	Warnica, J. F.
Mills, R. J.	Letellier, L. A.	McFeetors, H. E.
Martin, L. M.	Olson, J. O.	Daly, A.
Snell, G. H.	Armstrong, W. J.	Anderson, H. R.
Akins, S. C.	Rochon, R.	James, C. N.
Foster, B. D.	Hoar, H. B.	Bryans, H. S.
Freitag, H. A.	Kinsman, M. A.	Beckett, R. J.
Butler, J. A.	McGowan, J. C.	Coughlin, L. M.
Beattie, N.	Hunter, W. H.	King, J. A.

To Take Further Examinations, Second Year Students.

Adams, R. B.—Chemistry, Anatomy.

Barnes, A. F.—Chemistry.

Bell, J. W.—Chemistry, Anatomy; 1st Year Histology.

Broadworth, R. T.—Chemistry.

Calbeck, A. G.—Chemistry, Physiology.

Campbell, E. T.—Chemistry, Anatomy, Dental Anatomy, Histology.

Clark, W. D.—Chemical Laboratory.

Davidson, B.—To write Term examination in Comparative Dental Anatomy.

Douglas, N. S.—Chemistry, Materia Medica, Dental Anatomy, Physics.

Duff, J. C.—Chemistry.

Faulkner, W. J.—Comparative Dental Anatomy.

Garfat, E.—Chemistry, Physiology; 1st year Chemistry, 1st year Physiology.

Garvey, L. R.—Chemical Laboratory.

Halladay, G. B.—Histology, 1st year Physiology.

Howson, G. W.—Chemistry.

James, C. N.—Comparative Dental Anatomy.

Jewitt, G. G.—1st Year Physiology.

Johnston, G.—Histology, Physics.

Jones, U. N.—Chemistry.

Kerr, A. R.—Chemistry, Materia Medica; to complete Practical work Dental Anatomy.

King, J. A.—Physics.

Laidley, C. H. M.—Chemistry, Chemical Laboratory.

Marshall, E.—Chemistry, Histology; to complete Practical work in Dental Anatomy.

Martin, L. M.—1st Year Physiology.

McAllister, Miss M. R.—Chemistry.

McClure, F. D.—Chemistry, Anatomy, Materia Medica, Prosthetic Dentistry, 2nd Year; Osteology, Histology, Dental Anatomy, Comparative Dental Anatomy, Physiology, Chemistry, 1st Year.

McIntosh, D.—Chemistry, Operative Dentistry; 1st Year Chemistry, Physics, Histology.

McLean, W. F.—Chemistry.

McLister, J. C.—Chemistry, Chemical Laboratory, Anatomy, Histology, Physics.

McMullen, J. E.—Chemistry, Anatomy.

Partlo, J. M.—Chemistry.

Robb, W. J.—Chemistry, Chemical Laboratory, Materia Medica; 1st Year Chemistry, Physics; to complete Practical work in Dental Anatomy.

Roberts, J. F.—Chemistry.

Robinson, T. A.—Chemistry, Materia Medica, Physics.

Rogers, J. L.—Chemistry.

Rowsome, C. M.—Chemistry.

Ryan, L. N.—Chemistry, Prosthetic Dentistry; 1st Year Physics, Histology, Dental Anatomy and Comparative Dental Anatomy.

Sockett, R. J.—2nd Year Chemistry, Chemical Laboratory.

Spellman, J. A.—1st Year Chemistry, Osteology, Histology, 1st Year Physiology; 2ndd Year Organic Chemistry, Inorganic Chemistry Laboratory, Anatomy.

Wagner, G. W.—Chemistry.

Watson, D. A.—2nd Year Chemistry, Anatomy; 1st Year Osteology, Histology, Chemistry, Dental Anatomy, and Comparative Dental Anatomy.

Wood, C. D.—1st Year Chemistry, Osteology, Dental Anatomy, Comparative Dental Anatomy; 2nd Year Chemistry, Anatomy, Materia Medica, Physiology.

THIRD YEAR RESULTS.

Winner of J. B. Willmott Memorial Scholarship—H. A. Ross.

Ross, H. A.
McKee, G. H.
Voaden, W. W.
Giffen, J. F.
Lapp, J. S.
Mayer, M. A.
Speer, V. D.
Hillis, R.
Clermont, C. C.
Brownlee, H. G.
McLeod, W. D.
Gunton, C.
MacLachlan L. E.
Leach, H. W.
Davidson, H.
Walroth, E. J.
Brown, H. M.
Countryman, J. G.
Walker, G. T.
Fralick, R. F.
Model, S.
McLean, C. A.
Courville, C. A.
Spence, W. A.
Holmes, W. T.
Mitchell, W. B.
Palmer, A. M.
Bregman, B.
Milburn, S. A.
Wilson, A. H.
Moyle, C. T.
Gemeroy, G. A.
Green, J. C.
Lally, J. V.
Cooper, A. F.
Speers, W. W.

Taylor, H. D.
Miller, W. J. H.
McVicar, K. N.
Teich, J.
Graham, J. A.
Johnson, L. A.
Gollop, F. G.
Lajoie, E. T.
Farrell, V. R.
Hartley, M. W.
Haynes, N. W.
Avery, C. H.
Hughes, P. C.
Croft, L. H.
Strath, J. H.
Winn, N. D.
McBride, E. S.
Garbutt, H. R.
Race, W. W.
Fraser, J. E.
Lundy, B.
McCrostie, H.
Grace, A. W.
McLachlan, J. R.
Babcock, F. E.
Seymour, W. M.
Beach, F. W.
Clark, V. A.
Bartholomew, J. W.
Clark, A. M.
Wintrope, L. M.
Joynt, G.
Hiscox, R. J.
Blancher, K. A.
Bell, L. R.
McLaughlin, R. C.

Pollock, G.
Sadleir, E. A.
Walton, A. H.
Morrison, J. D.
Backus, A. A.
Oldham, G. E.
Caulfield, H. J.
Eckel, H. W.
Kemp, S.
Haryett, R. E.
Golding, J. W.
Miller, L. J.
Murphy, N. J.
Richardson, W. R.
Durant, W. L.
Hesson, E. J.
Hicks, E. D.
Kelley, C. J.
Freestone, R. W.
Morgan, G. S.
Blakely, W. M.
Weese, F. A.
Shaunessy, J. O.
Winn, R. E.
Box, W. M.
Himelstein. I. L.
Ben-Ezra, I. M.
Snider, N. W.
Ewert, W.
Long, V. C.
Dupuis, L. F.
Moss, S. I.
Buttery, G. A.
Herrington, J. H.
Frawley, G. L.
Bradley, R. W.

Completed Third Year and Passed all Subjects Upon which he Wrote.

Irwin, J. T.

Third Year Students to Take Further Examinations or Complete Practical Work.

Bartholomew, J. W.—To complete Prosthetic Technic.

Bell, L. R.—To complete Prosthetic Technic.

Blakeley, W. M.—Inorganic Chemistry Laboratory.

Bradley, R. W.—2nd Year Chemistry, Anatomy, Chemistry Laboratory; to complete Orthodontia and Prosthetic Technic.

Butler, R. F.—Metallurgy; To complete Orthodontia Technic.

Buttery, G. A.—To complete Orthodontia Technic.

Caulfield, H. J.—2nd Year Chemistry.

Charles, B. J.—2nd Year Chemistry, Metallurgy; To complete Orthodontia Technic.

Clark, A. M.—To complete Orthodontia and Prosthetic Technic.
Davidson, H.—Materia Medica, 2nd Year Physiology.
Dean, R. A.—1st Year Chemistry, Anatomy, Metallurgy.
Ewert, Wm.—To complete Orthodontia Models.
Farrell, V. R.—To complete Orthodontia Technic.
Frawley, G. L.—Histology, Osteology, Organic Chemistry.
Gilbert, S. C.—Metallurgy.
Gunton, C.—1st Year Chemistry.
Haynes, N. W.—To complete Orthodontia Technic.
Herrington, J. H.—To complete Orthodontia Technic.
Hesson, E. J.—2nd Year Chemistry.
Hiscox, R. J.—To complete Prosthetic Technic.
Kemp, S. W.—2nd Year Chemistry; to complete Prosthetic Technic.
Lajoie, E. T.—1st Year Chemistry, Physics.
Lally, J. V.—1st Year Physiology; To complete Prosthetic Technic.
Leach, H. W.—To complete Prosthetic Technic.
Long, V. C.—Histology, Anatomy.
Mahoney, C. J.—Metallurgy; To complete Orthodontia and Prosthetic Technic.
Miller, L. J.—To complete Orthodontia and Prosthetic Technic.
Morgan, C. E.—1st and 2nd Year Physiology, Metallurgy, Pharmacology; To complete Orthodontia Technic.
Morton ,G. A.—Pharmacology; To complete Prosthetic Technic.
Moss, S. I.—1st Year Chemistry.
Murphy, N. J.—2nd Year Chemistry.
McBride, E. S.—Histology, Organic Chemistry, Anatomy.
McCrostie, H.—To complete term work in Comparative Dental Anatomy and Materia Medica.
MacLachlan, D.—2nd Year Chemistry, Anatomy, Physiology, Pharmacology; To complete Orthodontia Technic.
McLaughlin, R. C.—1st and 2nd Year Chemistry.
McLeod, W. D.—To complete Orthodontia Technic.
O'Connor, G.—1st Year Chemistry, Metallurgy; To complete Orthodontia Technic.
Perdue, G.—Metallurgy.
Race, W. W.—1st Year Chemistry; To complete Prosthetic Technic.
Reid, E. A.—Metallurgy, Pharmacology, Materia Medica; To complete Orthodontia Technic.
Rubenstein, J.—Metallurgy, Histology.
Snider, N. W.—2nd Year Chemistry.
Speers, W. W.—To complete Prosthetic Technic.
Steele, R. B.—Metallurgy, 1st and 2nd Year Chemistry, Dental Anatomy, Histology, Materia Medica, Osteology, Anatomy.
Teich, J.—2nd Year Physiology; To complete Orthodontia Models.
Walker, G. T.—2nd Year Chemistry.
Warren, E. M.—2nd Year Chemistry, 2nd Year Physiology, Pharmacology, Prosthetic Dentistry; To complete Orthodontia Technic.

FOURTH YEAR.

Passed Final Examination for L.D.S.

Crouch, S. S.	Godwin, W. O.	Carrothers, E. T.
Moore, S. A.	Richardson, S. M.	Wright, R. A.
Bebee, M. C. G.	Poyntz, A.	Norton, A. L.
Blandin, M. H.	Johnson, W. M.	Poag, A. R.
Johnston, H.	Ott, B. M.	Quigley, N. J.
Chegwin, A. E.	Slone, A.	Smyth, W. D.
Hotham, R. I.	Hall, R. W.	Holmes, E. W.
Laidlaw, A. N.	Watson, R. M.	McGowan, J. L.
Barnby, A. E.	Dickson, S. R.	Sawyers, W. L.
Ferguson, D. J.	Murray, G. S.	Sirrs, G. A.

Mackle, J. L.
Millan, R. P.
Clemence, T. C.
Stewart, J. L.
Staples, L. W.
Couture, A.
Oke, C. R.
Flett, D. M.
Hart, R. A.
McLaurin, J. C.
Dickson, J. H.
Shortreed, R. D.
Jones, A. W.
Mitchell, G. F.
Milne, J. A.
Barkley, W. K.
Bean, H. G.
Lamey, M. P.
Bishop, R.
Aitken, E. S.
Stewart, C. E.
Russell, C. T.
Smith, W. H.
Dodge, G.
Daryaw, C.
Roach, H. C.
Smith. E. P.
Foley, C. J.
Shannon, G. L.
Klopp, H. F.
Hord, A. M.
Hoag, H. W.
Hartford, H. A.
Wood, A. D.
Robinson, E. J.
Saunders, H. A.
Lavine, J. J.
Murray, W.
Hayes, W. N.
Fraser, L. G.
Gardner, A. V.
Pickard, J. W.
Montgomery, J. G.
Alston, W. G.
Gravel, L.
McLeod, S. M.
Drew-Brook, L. D.
Morton, J. F.
McPhee, A. A.
McCann, H. J.

Des Rosiers, R. L.—Ill at time of examination, and granted aegrotat standing.

Hugill, W. L.—Ill, and granted standing in four subjects. Passed all subjects upon which he wrote.

Completed Final Examinations and Practical Work since Annual Examinations, 1917.

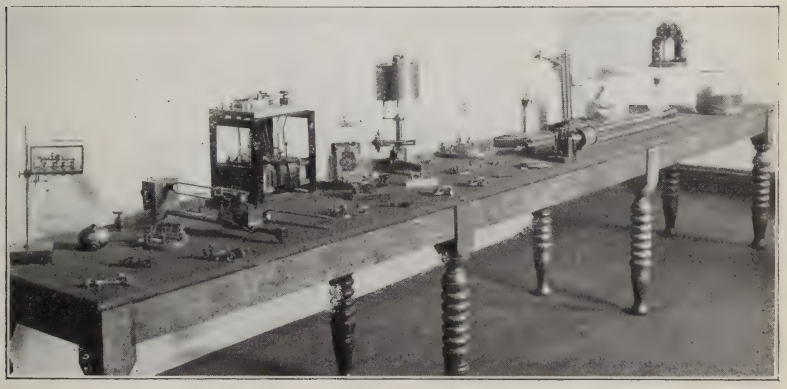
Reveler, J. M.

Wrote Final Examinations Without Attendance at this College.

Evans, R. P.—Passed in the following subjects:—Medicine and Surgery, Operative Dentistry, Prosthetic Dentistry, Exodontia, Economics, History of Dentistry, Ethics and Jurisprudence.

To Complete Clinical Dentistry.

Levesque, G.—(Completed May 31, 1919).
MacKay, W. M.—(Completed May 22, 1919).
Moyer, C. E.—(Completed May 31, 1919).
O'Leary, E. J.—(Completed May 31, 1919).



Physiological apparatus, used as a teaching adjunct in the study of heart and muscle actions under various conditions in their relation to Dentistry.

GRADUATES.

Dental Practitioners Course.

LEADING TO THE DEGREE OF DOCTOR OF DENTAL SURGERY.

DENTAL science and practice have made rapid progress during the past few years. Many dental practitioners feel the need of returning to College for a session, for the purpose of familiarizing themselves with modern methods of dental practice.

The University of Toronto and Royal College of Dental Surgeons of Ontario, appreciating the need and realizing what an important public service might be rendered in making such a course available to dental licentiates, have instituted a special Dental Practitioners Course, leading to the Degree of Doctor of Dental Surgery.

The object of the course being to meet the clinical and scientific needs of each candidate, the curriculum of studies (including Laboratories, Infirmary, and Didactic Instruction), will be arranged to meet the requirements of each individual case. The intention is, having regard to the candidate's present knowledge, to plan a course that will enable the Dentist to return to his practice and render a better and more scientific service to his patients than was previously possible. All the later and approved methods of dental practice will be taught, including every branch of Dentistry.

Dental practitioners, registered within the British Empire, may apply for admission to a special course of seven months, at the Royal College of Dental Surgeons of Ontario. The Degree of Doctor of Dental surgery will be granted to such of these candidates, as properly authenticated as to character and ethical standing, pass all examinations prescribed in each case.

No candidate will be admitted to this course unless he is recommended by the official licensing body of the province or country in which he has been in dental practice.

Each application will be considered on its own merits and the conditions on which the applicant may proceed to the Degree of Doctor of Dental Surgery will be determined accordingly. Each applicant must submit, at the time of application, the following documents:—

1. A certificate of matriculation in Arts in a recognized University or registration in the General Medical Council of Great Britain.
2. Certificate of graduation from a recognized Dental College or Faculty.
3. Certified copy of dental license.
4. Recommendation from official licensing board as to applicant's (moral and ethical) worthiness to proceed to a University degree.

Those accepted as candidates for the degree will be required to write upon the examinations of the Senior Year, together with such other subjects as may be deemed necessary, having regard to the previous education of the candidate.

Date of Registration for Practitioners Course.

Registration September 19th, 20th and 22nd, 1919, 10.00 a.m. to 1.00 p.m.

Regular Work of the Session commences at 8.30 a.m., September 23rd, 1919.

FEES.

Payable to University of Toronto.

Registration Fee	$ 5.00
Examination Fee	5.00
Fee for Degree	10.00
	$20.00

Payable to Royal College of Dental Surgeons.

Registration Fee	$ 5.00
Tuition Fee	150.00
Hospital, Class and Infirmary	12.00
	$167.00

Certificate of Licentiate of Dental Surgery (Ontario)

GRADUATE DENTISTS

Graduate Dentists of ethical conduct and good moral character holding a graduation diploma from a recognized Dental College, upon meeting the matriculation requirements of the Royal College of Dental Surgeons of Ontario, may be admitted to the examinations of the Royal College of Dental Surgeons and be required to write upon the Final Examinations in all of the subjects, contained in the R.C.D.S. four-year curriculum. Examination fee $250.00.

GRADUATES (CITIZENS OF ONTARIO).

Citizens of Ontario who have regularly graduated from a recognized dental college and who have established themselves in regular, ethical dental practice, for more than four calendar years, may be admitted to the examinations of the Senior Year, without meeting matriculation requirements. Examination fee $190.00. Such candidate may attend any portion of the Final session of the School of Dentistry of the R.C.D.S. without tuition fee by paying examination fee at time of admission.

Title of Master of Dental Surgery.

Provision has been made for examinations for the title of Master of Dental Surgery, to be held at the same time and place as the Annual Examinations for Licentiate of Dental Surgery.

All Licentiates in the Province of Ontario, of not less than five years' standing, shall be eligible for examination.

The following are the present requirements of this examination:

The written examinations shall include all of the following subjects: Operative Dentistry, Dental Pathology and Dental Therapeutics, Bacteriology, Medicine and Surgery, Exodontia, Anaesthetics and Analgesia, Prosthetic Dentistry, Orthodontia, and shall satisfy the examiners in Practical Dentistry.

Practical Work (to be completed at home and exhibited to the examiner).—Three metal inlays; three porcelain crowns (one interchangeable facing, one cast base, and one porcelain); one porcelain bridge, optional; one metal bridge; one orthodontia case from practice, with models when commenced, and models when completed, with appliance and retainer used; one full denture on metallic base, vulcanite attachment. Candidate to make declaration that all the practical work handed in for examination was executed by himself.

Practical Work, to be perfermed in the College.—Three gold fillings, three amalgam fillings, one gold inlay, two silicate fillings.

The subject of the Thesis for 1919 is: "Treatment and Filling of Root Canals." The Thesis is limited to 2,000 words.

Application for examination for M.D.S., with the fee of $20 and the "thesis," must be in the hands of the Secretary of the Board not later than April 1st, 1920.

Post Graduate Course for Dentists of Canadian Expeditionary Force.

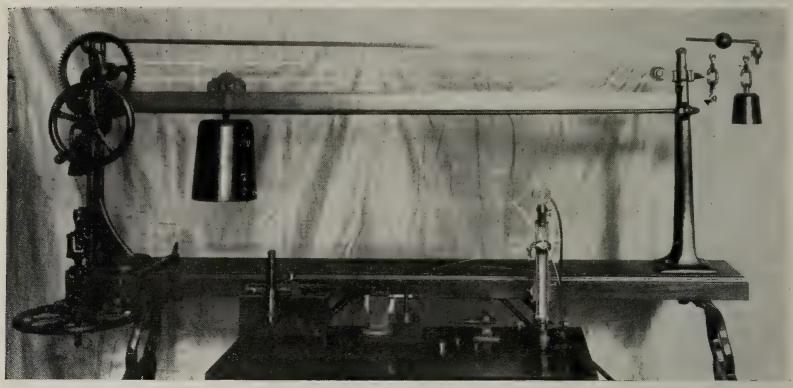
The Board of Directors has made provision for a special Post Graduate Course to be held commencing Monday, 15th September, 1919, and open to all Dental Practitioners who have given service in the Canadian Expeditionary Force.

The course will embrace one week of intensive study, including clinics, demonstrations and lectures, followed by special clinics in the College Infirmary. Registrants will be permitted to attend the sessions of the Infirmary for as long a period as they desire.

No fee of any kind will be charged, the Board having made provision for all expenditures in connection with the Course.

The work to be covered will include the more recent methods in dental practice. Applicants are invited to state what subjects they would prefer to study, and every effort will be made to meet the wishes of those taking the Course.

Applications should be in writing, and in the hands of the Superintendent not later than the 25th of August, 1919.



Testing Apparatus in the Strength of Materials Section.

THE TRAINING SCHOOL FOR DENTAL NURSES.

A COURSE of training to prepare young ladies to act as assistants to dental practitioners, will be established commencing session 1919-20. The course will embrace seven months' instruction and will be divided into two semesters. Successful candidates will be awarded a certificate entitling the holder to be known as a Dental Nurse.

The objects of the course are, to train young women for service to both dentist and patient, in the practice of Dentistry, and to prepare them for public service, to act in the capacity of assistants to Dentists engaged in school and Hospital Dental service.

The subjects of the course will include the following:—

Office routine and management.
Records, banking and correspondence.
Assisting at Dental chair.
Knowledge and care of instruments, materials and equipment.
Assisting with anesthetics.
Preparation of drugs for Dental use.
Sterilization and Sanitation.
Elementary pathological laboratory technique.
Elementary prosthetic laboratory technique.
Radiography.
Ethics and conduct.
School and hospital dental service.
The tooth brush and its use.

The Registration Committee at its discretion may admit experienced dental assistants to the second semester.

FEES.

Registration Fee $10.00
Tuition Fee ..... 20.00 each semester.

The Dental Nurses' Class for session 1919-20 will be of limited number and applicants are therefore requested to send written applications, with credentials, to the Superintendent previous to the regular Registration days.

All applications are subject to the approval of the Registration Committee.

A corner in the Applied Dental Physics Laboratory.

SCHOOL OF DENTISTRY

OF THE

Royal College of Dental Surgeons of Ontario

THE work in the several departments is planned with reference to that done in other departments, and care is taken that the whole shall be so correlated, and the subjects follow each other in such sequence that as far as possible the student, in taking up a new subject, will find himself prepared by previous work done in the same, or in another department.

OPERATIVE DENTISTRY, DENTAL PATHOLOGY AND THERAPEUTICS.

A. E. Webster, L.D.S., D.D.S., M.D., Professor.
A. D. A. Mason, L.D.S., D.D.S., Associate Professor.

The subjects of this department are introduced by a review of dental histology, development of the teeth, and introductory studies of biology and bacteriology. The subject of dental anatomy is also carefully reviewed, having special reference to the development of the enamel, its thickness and direction of the rods. Careful studies are made of dentine, its formation, thickness, strength, and methods of cutting. The introductory lectures on dental caries are illustrated by hundreds of examples of dental caries found among a stock of extracted human teeth. Different methods of preventing dental caries are discussed and illustrated. The instruction in the preparation of cavities is given in lectures and demonstrations on large plaster-paris teeth; each typical cavity found in the human teeth is first made in plaster teeth, five times the natural size, and then in ivory teeth the natural size, and then in extracted human teeth. These cavities are filled with the various filling materials in common use. In the subject of dental pathology and therapeutics, introductory lectures are given on methods of treating toothache, dental alveolar abscess, devitalization of dental pulps, and filling the roots of teeth. This completes the work of the Sophomore Year.

Junior Year.

At the beginning of the third year, the professor of dental anatomy reviews the whole subject. Lectures, demonstrations, and technique work go hand in hand in the laboratory course. During the latter part of this session the general lectures in Operative Dentistry are begun in the Lecture Room. A review of dental caries, cavity preparation, and the treatment of the roots of teeth is at first hurriedly gone over, then all the difficult cavity preparations are undertaken where large filling restorations are required. The most modern methods of anatomical restoration of decayed teeth are illustrated, large gold fillings inserted, amalgam retained in the teeth by means of posts. Various methods of gold and porcelain inlay restorations are

given attention at this time. The course in dental pathology and therapeutics is reviewed. In this department the student has the opportunity of treating and filling root canals of teeth and of having the use of X-ray photographs, at every stage of his work.

Before the students are permitted to go into the Infirmary to practice on patients, they must pass an oral examination on the subject of dental practice, conducted by the heads of the departments of dentistry. During the last three months of the year much of the junior student's time is spent in the Infirmary in practising upon patients. During this time special demonstrations and lectures are given in dental practice. Each student is required to do a certain amount of practice upon patients as part of his examination required for this year.

Senior Year.

The course in Operative Dentistry for the fourth year is begun by a rapid review of all methods to relieve pain of dental origin, examination of patients, and the preparation of the mouth for operative procedures. The student is expected to spend a large part of his time in the Infirmary of the College, practising upon patients, besides attending demonstrations and lectures on operative dentistry and dental pathology.

PROSTHETIC DENTISTRY.

W. E. Cummer, L.D.S., D.D.S., Professor (Major, Canadian Army Dental Corps).
I. H. Ante, L.D.S., D.D.S., Associate Professor.
W. H. Coon, L.D.S., D.D.S., Demonstrator in charge of Freshman Laboratory.

FRESHMAN YEAR.

Lectures.—The instruction in this department, both in the lecture room and the laboratory, begins in the Freshman Year, and is continued throughout the whole four sessions.

Lectures in Prosthetic Dentistry, in the Freshman Year, open with introductory lectures, setting forth the character of the subject and a general exposition of the principle governing and conditions requiring attention, in Prosthetic Dental restorations. From that the instruction becomes more specific, including the preparation, properties, and proper handling, of the various substances used in the laboratory, the principles underlying the construction of dentures on plastic bases, and the construction of the elementary forms of metallic bases, as well as the various forms of retaining devices. The course is designed in such a manner as to cover the principles involved in the most-frequently-met-with forms of artificial dentures as a technique procedure.

Laboratory.—In the laboratory the professor and his assistants will demonstrate the taking of impressions, construction of models, the arranging, and articulating of full and partial dentures, waxing, flasking, packing, vulcanizing, and finishing artificial dentures on a vulcanite base. This will be followed by instruction in the construction of metal casts and dies, the swaging and casting of metal bases, the proper annealing of the several metals, the use of the blow-pipe, simpler details of soldering, assembling, etc. The plan will be followed through each year as far as possible, of following principles set forth in lectures with practical application of such principles by the student in the laboratory.

SOPHOMORE YEAR.

Lectures.—Introductory lectures in Dental Prosthesis in the Sophomore Year will consist of a review of the normal structures found in, and functions carried on in the mouth, in which the student is concerned in replacing lost teeth; conditions leading up to the necessity for the removal of natural teeth, and the changes taking place in structure and functions after such removal has taken place. Following on this the general procedure in the making of a denture for a patient is outlined under the heading of Examination of the Mouth, Design of Suitable Appliance, Impression, Various Operations on Trial Plate, Trying In, and Insertion, sufficient to give interest to the student in technique work following the lectures. The course also includes instructions in advanced metal work, special attachments, etc.

Laboratory.—Following this series of lectures, a course in technique has been prepared, in which the student works out for himself in the laboratory, under the direction of the Professor and his staff, the principles set forth in the lectures. This includes more advanced work in soldering, assembling, and swaging, technique of lining plaster matrices for vulcanite work with tin foil, including instructions in the necessary carving representing the gum tissues, rugae, laboratory construction, vulcanite splint for fractured mandible, etc. Also an exercise in the laboratory method used in developing the compensating curves of the teeth in the full upper and lower dentures, in accordance with the inclination of the condyle path or anatomic articulation.

JUNIOR YEAR.

Lectures.—Lectures in Prosthetic Dentistry in the third year are primarily designed to utilize the instructions of previous years, both didactic and practical, into the discussion of actual methods of practice in dealing with patients. Special attention is given to the designing of the denture as a piece of mechanism, including selection of retention, distribution of stresses, selection of base, etc.:—The study of different facial types, and preservation of harmony in artificial substitutes in form, color and arrangement, etc. A complete exposition of the principles underlying anatomic articulation of dentures is given in this year, and the instruction is designed to be of maximum benefit to students upon their entrance to the Infirmary, with its attendant privilege in constructing prosthetic appliances for actual patients.

Laboratory.—The Laboratory or practical work consists chiefly in advanced partial denture design, continuous gum, and obturator design and construction, alteration of color and form of artificial teeth for special requirements, with practical work for patients in Infirmary. Also construction of cases from printed descriptions only, fitting the student for future utilization of current dental literature.

Lectures, War Prosthesis.—During the Junior Year, elementary instruction in this most important branch will be given, which is designed to prepare the student of dentistry for the most important duty of treating patients suffering from war and other injuries requiring a special Prosthesis, in addition to furnishing special dental appliances for collaboration with the Surgeons in dental surgical operations. This instruction includes types of elementary surgical prosthesis, elementary mechano, therapeutic dental appliances.

Laboratory Course, War Prosthesis.—An elementary course in laboratory exercises intended to fit the student for the construction of special appliances for soldiers and others, suffering dento-facial injuries, as well as civilians, including special dilators and an exercise in surgical prosthesis.

Lectures.—Lectures in Senior Year are devoted entirely to methods in practice, including discussions of special cases present in Infirmary; discussions of newer methods occurring since the beginning of the student's course. Suggestions designed especially for students about to enter practice will be offered, including management of patients, assistants, laboratory arrangements, special devices, etc., etc. Also lecture demonstrations showing full upper and lower restoration, using Hall method of impression and the Rupert Hall and Gysi system of anatomical articulation, using a patient. Further lectures on advanced partial denture design will also be offered.

Lectures, War Prosthesis.—This important subject with its direct application in dental-facial war reconstruction problems presents with more or less frequency in daily practice and will be thoroughly treated by a member of the Canadian Army Dental Corps, utilizing the experience of many fellow officers. Classification of injuries and prosthesis restoration (Martinier) and also the subject of temporary appliances of a mechanical therapeutic or prosthetic character, and permanent appliances including artificial hard and soft palate, tongue, nose, ear, eye, and surrounding tissues are included in lectures and demonstrations covering this branch of prosthesis for patients suffering from the loss of teeth from gunshot, shrapnel or other wounds, with the object of preparing the student for this all important duty.

Laboratory Work in War Prosthesis.—Laboratory work in War Prosthesis is entirely elective, a subject to permission and exemption by the head of the clinical department and includes advanced exercises in dento-facial appliances and restorations, as covered by the lectures in this subject.

General Laboratory Course.—An intensive laboratory course of unusual value will be offered the students of the fourth year, which will permit them to concentrate on the technical laboratory operations for patients in the Infirmary for a portion of the session, and also permit them for the balance of the term to concentrate on the chairside aspect of the subject, with the privileges of having the chairside operations executed in the laboratory, thus allowing uninterrupted progress in both these important branches. During his term in the laboratory the student will have the privilege of continuing instruction under a Director with his assistant, an expert laboratory technician. During the balance, devoted to chairside work, the student will learn co-operation with laboratory assistants, will have the practice of drawing plans and specifications for the various laboratory procedures growing out of the chairside operation, which will effectually fit him for the necessary future co-ordination of clinical dental practice and laboratory attendance.

CROWN AND BRIDGE WORK.

A. A. Stewart, L.D.S., D.D.S., Professor.

This important branch of modern dentistry is taught during the first, second, third, and fourth years of the course, both by lectures and in the Laboratories.

In the first year an elementary course is given in soldering and casting, with a short course of lectures covering the underlying principles of these two important subjects.

In the second year a course of Lectures is given in Crown and Bridge work, covering the principles underlying the subject, the advantages and disadvantages of such methods of restoration, the pre-

paration of roots and natural teeth preparatory to inserting crown and bridges, the material to be used, the making of single crowns, and the assembling and soldering of the parts of which a bridge is made up.

In the third year porcelain crown and bridge work is taught. The lecture course for this year covers the application of porcelain to crown and bridge work; the best methods of using "ready to wear" crowns; the use of inlays as abutments; removable bridge work, and the use of the various attachments in connection with crowns and saddle bridges or partial plates.

In the Laboratory each student will be required to make the skeleton work for a porcelain bridge and two porcelain crowns; and a piece of bridge work for a case, supplied by the professor in charge. This piece is to be made entirely on the student's own responsibility, and without help from professor or demonstrator.

In addition, the casting of bases to "ready to wear" crowns and the application of the various attachments will be practically carried out.

In the fourth year, as far as possible, the work will be done for patients in the Infirmary.

The Lecture course will include the many variations from the standard principles taught in the two preceding years; the results that may reasonably be expected of operations in this field and of the dangers to be guarded against.

The best methods of repairing crowns and bridges will be discussed, and the important work of finishing and cementing will be presented.

In the Laboratory the work will be done for the Infirmary, and the technic of the more difficult and delicate operations will be demonstrated by the professor in charge, and carried out individually by the students.

DENTAL ANATOMY, HUMAN AND COMPARATIVE.

R. D. Thornton, L.D.S., D.D.S., Professor.
(Captain, Canadian Army Dental Corps.)

The course in this subject is completed in the Freshman Year and is under the personal supervision of the Professor. It is one of the foundation subjects upon which is based the study of Operative Dentistry, Prosthetic Dentistry, including Crown and Bridge work, Orthodontia, Exodontia, Periodontia and Preventive Dentistry. It is closely associated with the subjects of Physiology, Histology, Bacteriology, Pathology and Oral Hygiene.

The study will begin with a brief reference to the classifications of the Animal Kingdom and will be followed by:—

1. General Survey of the mouths of different classes of animals.
   - (1) Position.
   - (2) Functions.
   - (3) Tissues of the mouth with emphasis upon the maxilla and mandible, their centres of ossification, sutures, results of non-union, e.g., cleft palate, hare lip, etc.
2. Teeth in General.
   - (1) Analogous organs and their uses in Invertebrates.
   - (2) Position in the oral cavity in Fishes, Amphibia, Reptiles and Mammals.
   - (3) Functions of the teeth in the different classes of Vertebrates.
   - (4) Structural composition of teeth showing evolution from softer tissue formation to hard enamel covering of parts subjected to wear.
   - (5) Modes of attachment of teeth, showing tendency toward implantation in deep sockets.

(6) Relation existing between strength of tooth attachment, diet, habits of securing food and functions required of teeth.

3. Temporo-Mandibular Articulation.
   (1) Its movements.
   (2) Effect of food habits upon it.
   (3) Relation existing between diameters of posterior teeth and condyle of mandible.
   (4) Relation existing between food habits, length of jaw, shape of teeth, strength of muscle attachment and temporo-mandibular articulation.
4. Specialization of Teeth to Perform Certain Functions.
   (1) Evolution of occlusion.
   (2) Theories offered in explanation of evolution of cusp formation.
   (3) Specialization of individual teeth, e.g., poison fang of viper, incisors of rodents, etc.
   (4) Heterodont dentitions, e.g., man.
5. Nature's Provisions for Maintaining High Standard of Dental Efficiency and for Protection against Wear, Traumatic Injury, Dental Caries, etc.
   (1) Succession of dentitions.
   (2) Arrangement of tissues of the teeth.
   (3) Arrangement of the teeth in the arch.
   (4) Diet.
   (5) Other contributing factors.
6. Study of the Dentitions of the Higher Apes, Prehistoric Man, Modern Savage races and civilized man.
7. Types of Teeth of Different Races.
   (1) Relation of teeth to shape and size of cranium.
   (2) Modifications of severe types due to intermingling of different races and nationalities.
   (3) Classification according to Temperamental Theory.
   (4) Dr. J. Leon Williams' Classification.
   (5) Anomalies.
8. Teeth of Man—Deciduous and Permanent Dentitions.
   (1) Process and time of calcification, eruption, absorption, succession, arrangement in the arch, relation to surrounding tissues, etc.
   (2) Minute study of external anatomy of each tooth.
   (3) Functions of various parts of each tooth.
   (4) Peridental membrane, alveolar process, etc.
   (5) Occlusion.
   (6) Effect of natural physical forces on shape of arches and on occlusion.
   (7) Malformations due to loss of these forces, traumatic occlusion and to habits.
   (8) Internal anatomy of each tooth with special reference to thickness of hard tissues at different locations; position, size and shape of pulp chambers, root canals, apical foramina, etc.
   (9) Effect upon remaining teeth from loss of one or more teeth, e.g., drifting, traumatic occlusion, etc.
9. Changes in Edentulous Arches.

In the Laboratory, the student will make drawings of the geometrical figures involved in the outlines of the teeth, outline sketches of the different teeth in the human denture and will follow this by moulding some of the teeth, enlarged five times, in plasticine. Exercises will be given in carving vegetable ivory blocks to definite geometrical form according to accurate measurements. This will be followed by carving a set of twenty-eight teeth in vegetable ivory, which

will be set up on an articulator resembling as closely as possible the arrangement in the natural dental arches of man.

Longitudinal and cross sections of extracted teeth will be made by the student for the study of internal dental anatomy. Students are advised to bring with them as many extracted teeth as they may be able to obtain.

Additional exercises may be given to any or all members of the class at the discretion of the staff in charge of the study of Dental Anatomy.

MATERIA MEDICA AND PHARMACOLOGY.

Walter E. Willmott, L.D.S., D.D.S., Professor.

The course consists of thirty lectures and ten laboratory sessions, and is taken up in the Sophomore and Junior Years. The student is expected to become familiar with the more important pharmaceutical preparations, the origin, preparation and methods of administration of drugs, and with the physical and chemical properties, the physiological and therapeutical action, of the chief drugs used in dentistry, and with prescription writing. Each student must be supplied with the prescribed text-book.

ELECTRO-THERAPEUTICS.

F. D. Price, L.D.S., D.D.S., Professor.

The instructor will, in ten lectures, discuss electricity as a therapeutic agent, and its special adaptation to the treatment of a considerable number of dental lesions. Especial emphasis will be given to the operation and use of X-rays.

ORTHODONTIA.

G. G. Hume, L.D.S., D.D.S., Professor.
(Lieutenant-Colonel, Canadian Army Dental Corps.)
C. A. Kennedy, L.D.S., D.D.S., Clinician.

JUNIOR YEAR.

During this year stndents will receive instruction in taking impressions and making models for orthodontia purposes. In the laboratory detail, technic of construction, and adjustment of appliances will be demonstrated, and each student will construct and adjust appliances on a model.

SENIOR YEAR.

To the students of the final year a course of lectures covering the whole subject will be given. In these lectures will be discussed in detail normal occlusion and malocclusion, with the forces governing each, the physiology and mechanics of tooth movement, the effect upon occlusion of the presence of adenoids, enlarged tonsils, and habits, the effect of malocclusion upon mastication and facial symmetry, the etiology, diagnosis, and classification of malocclusion. Modern appliances will be discussed in general and those for the correction of simple cases in detail. Models of the different types of malocclusion will be presented on the screen, with pictures showing the characteristic facial symmetry resulting from each type. The treatment and retention of simple cases will be discussed. In the Infirmary the students will treat simple cases under the personal direction of the professor and his assistants.

BIOLOGY.

Joseph S. Graham, M.B., M.R.C.S., Professor.

This course will precede the Course in Histology. Dissection of the frog will be taken up first. Following this the amoeba paramoecium will be studied; then such plants as the spirogyra and the pleurococcus. Yeast, water bacteria, and the hydro will also be taken up.

HISTOLOGY.

Joseph S. Graham, M.B., M.R.C.S., Professor.

The course in Histology is given in the Freshman Year, and will include the study of the construction and the use of the microscope, the study of the cell structure and functions, studies of the elementary tissue and the more important tissue, the embryology of the teeth, and the minute study of the several tissues of the human teeth, the pericementum, the mucous membranes and soft tissues of the mouth. The students will be taught to prepare, stain and mount sections for themselves.

BACTERIOLOGY AND PATHOLOGY.

Joseph S. Graham, M.B., M.R.C.S., Professor.
Harold K. Box, L.D.S., D.D.S., Associate Professor in Pathology.
D. M. Flett, L.D.S., D.D.S., Fellow.

The course in Bacteriology is given in the Junior Year. The professor will discuss the principles of Bacteriology, the principal bacterial forms, their modes of reproduction, the diseases caused by them, susceptibility and immunity. The subject of Primary Pathology will be briefly presented.

In the Laboratory Course the equipment includes culture ovens, sterilizers, and conveniences for making culture media. The practical instruction will include the preparation of culture media, planting and management of cultures, separation of mixed cultures; cultures from carious teeth, and putrescent pulps from practical cases in the Infirmary. Special attention will be given to the study of the bacteria of the oral cavity. In the Senior Year an extended course (didactic and practical) in general and special Pathology, will be given.

SURGERY.

E. Stanley Ryerson, M.D., C.M., Professor.

The course in surgery is completed in the Senior Year. It will include lectures on Surgical Pathology, septic infection, inflammation, suppuration, the general principles of surgery, the treatment of wounds, necrosis, caries of bone, diseases of the antrum, ankylosis, dislocation, fractures, tumors, surgical affections of the lips, tongue, and mouth, hare lip, surgical treatment of cleft palate, first aid, etc. Opportunity will be given the students to attend clinics at the General and other Hospitals, under the direction of the Professor.

ANATOMY.

J. Playfair McMurrich, M.A., Ph.D., LL.D., Professor.
T. A. Robinson, M.D., C.M., Chief Demonstrator.

The course in Anatomy extends through two years. In the Freshman Year the course is didactic, and includes a brief general statement of the growth and development of the body, the various tissues of which it is composed, and their relations to each other. As the course is for dental students only, special attention will be given to

the head and neck, studying in the first year the osteology and myology of these parts. Bones will be provided by the College, and on payment of a deposit will be given out to the students. The lectures will be illustrated from the skeleton, and by charts and preparations. In the Sophomore Year the didactic course will be continued, and the study of blood vessels, nerves, glands, and other tissues of the parts will be carefully made. During this year the student will, in the dissecting room of the Medical Faculty of the University of Toronto, and under the personal instruction of the demonstrators in Anatomy, very carefully dissect one other part and the head and neck. All the arrangements of the dissecting room are of the latest and most complete character. The Dental student does his dissecting under the most favorable conditions.

PHYSIOLOGY, HYGIENE, AND MEDICINE.

F. A. Clarkson, M.B., Professor.

The course in Physiology is continued through two years. In the Freshman and Sophomore years the professor will take up the general structure of the elementary tissues, the chemical composition of the body, the blood vessels, the blood and the circulation of the blood, the lung tissue and respiration. Attention will also be paid to secretion and excretion. In the Junior Year the student will study digestion, assimilation, nutrition, etc.; the structure of nerve tissue and enervation, muscular contraction and correlation of muscles.

The lectures will be illustrated by drawings, charts and physiological apparatus.

Medicine will include a course of lectures and demonstrations in physical diagnosis; lectures on etiology of diseases, disorders of nutrition and metabolism, anemia, fever, malaria, hygiene. Special attention will be given to the relation between a septic condition of the oral cavity and gastric, neurotic and other functional disturbances; the symptomology of syphilis, and other important constitutional diseases as manifested in the oral cavity.

Practical Physiology.

This course in the laboratory is designed to give the student a practical knowledge of the methods used in obtaining the facts of this science. It will include: Introduction to the metric scale; weighing food; estimating calories; testing of foods; experiments with muscle; the electric phenomena of muscle; electrotonus; demonstrations on the circulation; blood pressure; blood counting; the spirometer; artificial respiration; experiments demonstrating digestion.

METALLURGY.

Thos. Cowling, L.D.S., D.D.S., Professor and Demonstrator.

The course in this subject is both theoretical and practical, and consists of a series of ten lectures on the properties of metals; their combination with the non-metals; how they are melted, and the making of alloys and amalgams. The metals themselves are discussed as to their occurrence, reduction, properties, uses, analysis, etc.

The practical course is carried on in a special laboratory, well equipped for the teaching of modern metallurgy. It consists of refin-

ing by dry and wet methods, the making of alloys and metals for dental uses; the quantitative analysis of alloys and solders by gravimetric and volumetric methods. It extends over a period of sixty hours.

GENERAL AND PROFESSIONAL ETHICS AND DENTAL JURISPRUDENCE.

R. G. McLaughlin, L.D.S., D.D.S., Professor.

The course in Ethics will be given in the Freshman Year and will include a discussion of the underlying principles of Ethics, character building, the moral ideal, moral evolution, spiritual and mental culture, morality and religion, egoism vs. altruism, the influence of virtue on happiness and of happiness on character. Professional men and women as exponents of true citizenship and lofty ideals.

The direct application of these principles to professional life will be fully discussed; The Hippocratic oath, the Professional ideal, the proper ethical relations of the dentist to his patients, to his confreres and to the profession. The ethics governing consultation, advertising and patents.

A resume of Professional Ethics will also be given in the Final Year.

The course in Jurisprudence in the Final Year will include a study of the constitutional rights of the State to control the profession through its governing bodies—the legal responsibility of the dentist to the State and the Public—the different phases of malpractice—the position of the dentist as plaintiff, defendant, and expert witness before the courts, etc.

Also the special Dentistry Acts of the different provinces and others of special interest will be discussed.

PREVENTIVE DENTISTRY.

Wallace Seccombe, L.D.S., D.D.S., Professor.
Fred J. Husband, L.D.S., D.D.S., Clinician.

The object of this department is to study the causes of dental disease and to focus the attention of the student upon the application of preventive measures to the science and practice of Dentistry, to ensure personal habits of oral cleanliness upon the part of the student, and to outline the responsibilities of the individual dentist and the dental profession toward public hygiene undertakings.

FRESHMAN YEAR.

Introductory lectures upon Oral Hygiene and the relationship of oral cleanliness to good health. The correct technique of cleansing the teeth, frequency, care of brush, etc., with special reference to the personal habits of the student in this regard.

The whole subject of mastication in its relation to preventive dentistry, particularly the direction of the student's attention to those phases of the subject already taught by the department of Dental Anatomy; namely, the hygienic value of tooth-form, alignment, contact, occlusion, interproximal space, embrasures. The conditions, care, and general cleanliness of the mouth of each student periodically recorded, and needed instruction and advice given. This latter to be undertaken in co-operation with the clinical department.

SECOND YEAR.

Personal oral hygiene again presented along with a periodical examination of the mouth of each student, and a record of the hygienic conditions found. The relative susceptibility of the teeth, and of the several surfaces of the teeth to dental disease.

THIRD YEAR.

The whole subject of prophylaxis covered didactically and clinically, including a review of examination of the mouth, a comprehensive review of the question of the hygienic care of artificial dentures, orthodontic appliances, bridge work, splints, etc., etc.

SENIOR YEAR.

Lectures upon the subject of preventive dentistry in its widest application. Immunity and susceptibility to dental disease discussed from the standpoint of heredity, dental structure and development, food, saliva, habits, occupation, oral sepsis, oral cleanliness. Care of the mouth in the sick room, in convalescence, and during pregnancy. Injurious effects of medicines upon the teeth and their avoidance.

Responsibilities of the dental practitioner to the patient, and of the profession to the public, in questions of prevention. The organization and conduct of public educational propaganda and of public clinics and State dentistry.

INFIRMARY PRACTICE.

The student to make the widest possible application of the subject in his clinical work. The recording and study of clinical histories of susceptible and immune patients will form an important part of the clinical work of the senior year.

EXODONTIA, ANAESTHESIA, AND ANALGESIA.

E. W. Paul, L.D.S., D.D.S., Professor and Clinician.
J. A. Bothwell, L.D.S., D.D.S., Hospital Clinician.

Exodontia.—The whole subject of the extraction of teeth will be discussed at length, and will include the indications for extraction, a study of the roots of the teeth, their relation to the alveolar process, the selection of forceps and elevators, and the methods of using the same, the proper direction in the application of force, the dangers to be avoided, the accidents which may happen, and the procedure to be followed, the possibility of excessive hemorrhage, and the best means of treating the same; the preparation of the patient and the mouth for extensive extraction and the proper treatment of the mouth after the extraction. The students of the Junior and Senior years, under the direction of an instructor, perform the operations for the removal of teeth and roots.

Anaesthetics.—The course in General Anaesthesia will include a brief history of anaesthesia; the choice of an anaesthetic for dental operations; physical diagnosis, and a consideration of the conditions under which general anaesthetics are contra-indicated; the description and mode of action of Nitrous Oxide, Nitrous Oxide and Oxygen, Ethylchloride, Somnoform and the method of administration of each; the after-treatment of the patient; the accidents which may occur, the best means of avoiding them, and the proper procedure when they do occur.

Local Anaesthesia by the different methods (infiltration, interosseous and conductive), as well as General Analgesia for the painless treatment of such dental operations as extraction, removal of pulps, preparations of cavities in sensitive dentine, are taught and demonstrated.

Clinics are held at the different hospitals, where the students of the Senior Year are allotted in turn, in groups, and where they do the extraction under ether or chloroform, administered by the hospital anaesthetists. Anaesthetic clinics are given in the extraction room every Wednesday and Friday morning.

The lectures to the Junior Year include Exodontia and local anaesthesia by the infiltration method. The lectures and examination for the Senior Year are based on the whole subject of anaesthesia and exodontia.

APPLIED DENTAL PHYSICS.

W. E. Cummer, D.D,S., L.D.S., Professor of Applied Dental Physics.
G. R. Anderson, M.A., Associate Professor of Applied Dental Physics.
Richard Parris, Laboratory Assistant.

In this department, the entire field of general and technical physics is being constantly surveyed, and phenomena or processes, having any bearing, directly or indirectly, with Dentistry or forming a basis for any dental phenomena or processes are classified and presented with ample and practical laboratory exercises. The instruction both lecture and laboratory is offered during the first and third years.

FRESHMAN YEAR.

Lecture Demonstrations.—The lectures in the first year include fundamental concepts, measurements of precision, including measurements of dental parts, tissues, etc. by caliper, gauges, micrometers, microscopic measurements, etc., force, motion, velocity, acceleration, couple, momentum, gravity, work, units, horse-power, calculations of horse-power of dental appliances.

Simple Machines and their applications to dental phenomena and processes. Friction as applied for dentistry, static, kinetic, co-efficients of friction. Composition and resolution of forces, special dental applications, inertia and translatory motion with references to dental processes, mechanics of fluids, pressures, transmission of fluid pressures, dental applications and calculations, buoyancy, specific gravity of dental materials, air pressure, theory and use of in dentistry, air compressor apparatus for dental laboratory. Flow of liquids in pipes and relation to dental casting.

The Subject of Heat includes: Definition, co-efficient of expansion, various dental tissues and materials, change of state, chemical changes, various heat phenomena. Thermometry, pyrometry and calorimetry, uses and applications in dentistry, gas laws, insulation, ventilation, steam, steam boilers and vulcanizers, etc.

The Subject of Light includes: Definition and theory, velocity, reflection, mirror and image with special references to dental appliances. Refraction, lenses. The wave length of light as a precise unit of measurement. Optical instruments; the eyes an optical instrument, defects, remedies, function and care. Interior illumination, shadows, operating lights, various simple and compound magnifiers. Projection, transparent, opaque, animated, microscopic. The photographic Camera Dental Spot lights. The microscope; its construction, operation, limitations and care. Use of accessories; ocular, stage, and substage, illumination of various substances used in dentistry. The spectrum, spectrum analysis, use of spectroscope; color perception, harmony, contrast, analysis and blindness, various colorimeters, tintometers, etc., applied to natural and artificial teeth; interference of light, use of microscope for Polarization, Saccharimeter, food tests.

The Subject of Molecular Physics includes: Capillarity, adhesion, cohesion, rationale of adhesion of dentures in mouth and cementation. Surface tension. Relation to dental tissues and materials.

Magnetism: This includes natural and artificial magnets, laws of magnetic attraction and repulsion, lines of force, etc.

Electricity including: Nature of and its relation to matter, modern theory; manifestatons: (a) Static; (b) Dynamic. Electric potential. Batteries, simple cell, gravity cell, dry cell. Storage, voltage and amperage, units of electrical measurement, commercial instruments, Ammeter, voltmeter, wattmeter, etc., milliameter in pyrometry, ionization and X-ray work, various currents in commercial use available for dental offices, motors, direct, alternating, and universal; control, reverse; induction coils, transformers, rectifiers, use in Dentistry, commercial applications; technic of simpler connections and repairs, Underwriters' rules, safety precautions; radiant electricity, magnetic and electric waves, relation of electric energy to heat and light, resistances, wireless telegraphy, X-rays.

LABORATORY COURSE, FIRST YEAR.

This course has been arranged with the view of bringing to the mind of the student by means of exercises which, so far as possible, will be useful in both his future course and professional career, and commences with the brief review of such elementary mathematics as necessary in physical dental calculations, and includes elementary work on the plotting of curves. From this the subject of measurements of precision is covered by a selected series of exercises, which is followed by exercises on the mechanics of fluids in which is found a number of strictly dental applications. A very practical series of experiments in light have been arranged, including exercises on Weinhold Optical Benches, including synthetic construction of microscope. In addition to this, a comprehensive series of exercises on color have been arranged. Following this exercise on the relation of heat phenomena with dental processes is experimentally treated, followed by experimental work in Molecular Physics, including work on adhesion as concerning dentistry, Electricity and Magnetism, including Measurement of Current, Elementary Strength of Materials and Elementary Shop Technics. In all cases so far as it is possible these experiments are designed for their practical value.

APPLIED DENTAL PHYSICS AND STRENGTH OF MATERIALS, THIRD YEAR.

Lectures, Demonstrations.—The lectures in the Third Year are planned with a view of bringing to the student that section of Applied Physics which underlie the processes and phenomena connected with dentistry in an essential practical manner and commence with a discussion of the Physics of the manipulative processes in Dentistry, using Industrial and Dental technics as a basis.

The following are discussed in detail, both with respect to the Physics which underlie these operations and the intelligent application to Dental processes: Sawing, filing, grinding, polishing, burnishing and turning and threading.

Patterns, Dental Disappearing—Under this heading is discussed the entire problem of the physics and Hydromechanics of dental casting, including a physical and microscopic study of waxes.

Patterns, Industrial, Non-Disappearing, including Industrial casting as applied to Dentistry and Dental Research, Dental patterns nondisappearing, materials, wood, wax, metal plater, modelling compound, etc.: Elementary Wood technics for patterns for dental purposes.

Varnishes, Paints, Separating Media and various dental solutions, etc., the Physics and Microscopy, etc.

End Cutting Operations or solids with paired cutters, drilling and boring, elaboration and dental applications.

Side Cutting Operations or solids with multiple cutters, reaming, broaching, milling and burring, elaboration and dental applications.

Care of Frictional Surfaces, Special References to Dental Instruments.—Lubrication and sequence of events following lack of lubrication, especially handpiece.

Care of Edge Tools and Instruments, various cutting angles, balancing of cutting angles for different materials in dentistry and arts. Cutting angles various dental instruments, grinding, stoning, honing and stropping of instruments. Feather edge, the Shearing cut. Microscopy of edge tools and of cutting. Physics of removing various tissues, enamel dentine, with edge tools. The microtome, its action and care.

Interchangeable Manufacturing, its principles and use in dental manufacturing.

Freehand and Mechanical Drawing, as applied to Dentistry.

Photography.—Complete exposition of subject, as applied to dental records, including cameras, adjustments, lenses, shutters, screens, plates, films, lighting, exposure, development, illumination, especially of mouth cavity and dental objects, enlarging and reduction, printing for photogravure, photomicrography technique, motion photography in dentistry, etc.

Strength of Materials, including: stress, crushing, tension, shearing, torsion, bending; mechanical properties of bodies acted on by stresses, plasticity and hardness of material, method of estimating, stress-strain diagram, curves on dental materials, testing machines, lever and spring, various types and capacities, hydraulic machines, torsional machines. Young's Modulus, various records of distortion under stress.

Theory and Practice of Surveying, as applied to Orthodontia.

Acoustics of Mouth, includes elementary sound leading up to mechanism and acoustics of speaking and singing. Interference, loss of teeth, palate or improper restoration, normal phonation and synthetic formation of vowels and words outside mouth, photography and visual registry of sound. Whistles and lisps, etc., causes and correction; speaking trumpet, speaking tubes, listeners, instruments, stethoscope, phonograph, dictaphone, physical basis of percussion in physical diagnosis.

Psychology of Invention and Engineering Research as applied to Dentistry.—Opportunity for this service for mankind in the Dental Profession to-day. National Organizations, Canada and United States.

LABORATORY COURSE, THIRD YEAR.

The Third Year Laboratory instruction is specially designed to bring to the mind of the student the physical basis upon which the processes and phenomena of dentistry are based by a series of exercises, all of practical value in his future professional career. This Course includes exercises in the following:—Elementary Mechanico-Dental drawing, various working drawings of dental appliances, advanced steel technics, various operations on metals, filing, sawing turning, threading, tapping, drilling, rivetting, chiseling; all embraced in a single exercise of construction of Kazanjian universal head gear for dento-facial injuries; freehand turning, combined exercise in wood technics and pattern making, including pattern for base of hand rest for freehand turning with Ritter Lathe. Precision turning, interlocking retaining device, freehand and with slide rest on watchmaker's lather to blueprint, limit 1-1,000 of an inch. Photography, including 3 dental subjects and one photo micrograph. Strength of materials,

crushing tension, shearing, torsion, bending, intermittant, and elastic and other tests on samples of materials or tissues submitted by various departments. Plotting of stress-strain curves of above, detailed report, etc., of each test, to be returned to individual department for explanation elaboration or comment. Examination and report of fracture with binocular microscope, experiments with amalgam micrometer, reports to Departments concerned. Special tests for Wear, determination of co-efficient of wear for specified dental materials and tissues.

CHEMISTRY.

H. M. Lancaster, B.A.Sc., Professor.
Thomas Cowling, L.D.S., D.D.S., Associate Professor.
S. M. Richardson, L.D.S., D.D.S., Fellow.

The course in Chemistry is both theoretical and practical, and extends through the Freshman, Sophomore and Senior Years.

FRESHMAN YEAR.

Lectures.—Forty-five illustrated lectures on Inorganic Chemistry are given, extending through both terms of the session. Half the time is devoted to the discussion of the fundamental theories of Chemistry and the properties of the non-metals. The remainder of the course deals with the metals and their more important compounds.

Laboratory.—A course of sixty hours' practical work.

SOPHOMORE YEAR.

Lectures.—The study of Organic and Physiological Chemistry is introduced in a series of forty-five lectures, illustrated by experiments. This course includes the preparation and properties of typical organic compounds. Special attention is given to those compounds most generally used in the practice of Dentistry, and to substances of importance in the metabolic processes of the body. The discussion includes a consideration of the general composition of the body, the nature of food and the processes of digestion. Emphasis is placed upon the composition of teeth, saliva, and the chemical changes produced in food by the action of the bacteria of the mouth. The qualitative examination of urine is also included in this course.

Laboratory.—The practical course in Inorganic Chemistry consists of exercises in qualitative analysis. Thirty hours are devoted to this work.

In Organic and Bio Chemistry the student is required to make some organic preparations and to become acquainted with the chemical properties of compounds dealt with in the lecture course. This course of thirty hours' work includes the analysis of teeth, saliva, urine and some common foods.

SENIOR YEAR.

Lectures.—A course consisting of five lectures and demonstrations will be given for the purpose of increasing interest in the investigation of the problems of dental caries and pyorrhoea. The practical work suggested by the lecture course will be collated with that of the Infirmary. Analytical data will be included in the record sheets of the Department of Preventive Dentistry.

DENTAL CERAMICS.

J. W. Coram, L.D.S., D.D.S., Professor.

The course in the Junior Year consists of instruction in cavity preparation for porcelain inlays; the construction and insertion of one or more inlays; also the preparation of teeth for porcelain jacket crowns and clinics on construction. Necessary lectures are given in the Laboratory.

In the Senior Year lectures are given to cover the whole subject and instruction in the Infirmary is continued throughout the Senior Year.

DENTAL HISTORY.

F. J. Conboy, L.D.S., D.D.S., Professor.

The Professor in History will give a summary of the more prominent and important steps in the development of dentistry as a profession.

DENTAL ECONOMICS.

Wallace Seccombe, L.D.S., D.D.S., Professor.

JUNIOR YEAR.

A course of lectures will be given junior students, previous to their admittance to the College Infirmary, embracing a general consideration of the underlying principles of the Science of Economics and their general application to Dentistry. The course will cover particularly those problems peculiar to Infirmary practice and will embrace Infirmary Routine and Appointments, Dental Supplies, Cleanliness, Motion Study and personal factors entering into successful practice.

SENIOR YEAR.

In the Senior Year the course will be extended and directed particularly along more practical lines, enabling the student to better understand the problems he will meet in the actual conduct of dental practice.

The lectures will include office location, equipment and arrangement, professional fees and business relations, office records and stationery, office assistant, dental supplies, insurance and investments, economic value of habit, personality, cleanliness, suggestion and health, and the general management of the office and patient.

The written examination will be held in the Senior Year. Examination in the Junior Year will be entirely oral.

CLINICAL DENTISTRY.

Before entering the College Infirmary the student is subjected to a rigid oral examination on all subjects taught by the various departments in the previous years of the course.

The instruction given the student by all the departments in all four years of the course is applied in actual work for patients in the Infirmary, under the supervision of a competent corps of Clinicians.

The College is centrally located, and an abundance of clinical material is constantly available for both the regular Infirmary practice and the many special clinics given by the professors of the several departments.

A staff of honorary clinicians will be appointed commencing session 1919-20, composed of prominent dental practitioners, who will hold clinics in the College Infirmary from time to time during the session.

B. O. Fife, L.D.S., D.D.S., Professor of Clinical Operative Dentistry.

J. W. Coram, L.D.S., D.D.S., Associate Professor of Clinical Operative Dentistry.

G. H. Coram, L.D.S., D.D.S., Clinician.

W. C. Smith, L.D.S., D.D.S., Clinician.

L. F. Krueger, L.D.S., D.D.S., Clinician.

L. F. Boyle, L.D.S., D.D.S., Clinician.

Practical Dental Anatomy—Clinics are given weekly to the Senior Class, in the anatomical restoration of lost dental structures.

Bacteriology—The training in the science of bacteriology is put into practice in the Infirmary in the diagnosis of morbid conditions of the oral cavity. Students are taught the practical application of bacteriology to the practice of dentistry in all its phases. Diagnosis of oral and dental infections, their relation to systemic diseases, sterilization of instruments, and office equipment and cleanliness, both in regard to operator and patient.

Pathology—The science of general, dental and dento-histo-pathology is applied in the Infirmary in connection with the operative clinic, each student being required to make a study of special cases presented at the clinics held each week.

Orthodontia—A special clinic on Orthodontia is held twice a week throughout the session, when the Senior students have the opportunity of treating actual cases in the mouth.

Dental Ceramics—Clinical instruction is given in the Infirmary in the application of dental ceramics.

Therapeutics—(including Electro-Therapeutics) — Demonstrative teaching of the value of the well known therapeutic agents, including electricity, in its special adaptation to the diagnosis and treatment of dental lesions.

Crown and Bridge Work—The practical application of crown and bridge work in all its branches is made in the Infirmary. In this connection there is a special laboratory, with an instructor in charge.

Operative—In the operative clinic the student has splendid opportunity to put into practice the teaching of the Operative Department. Special clinics are given in the different branches of this work.

Research Work—Students desiring to undertake research work in connection with Infirmary practice will find opportunity of doing so. Suggestions and advice on methods of undertaking research problems will be given.

Dental Economics—The students are taught to make practical application of the instructions given in this subject. The Clinicians keep constantly in mind the training of the student in the general questions of management of patient and office, and the importance of cleanliness, habit, dental records, appointments, use of assistant, value of the dentist's time, and the general application of the science of economics to dental practice.

Preventive Dentistry—The application of the teaching of the Chair of Preventive Dentistry in all its branches is made in the In-

firmary. Special clinics in oral prophylaxis are given on the subject, and the Senior students are taught to observe and record those factors which influence susceptibility and immunity to dental disease.

Practical Dental Radiography—The course in this subject will be taught during the Senior Year. The X-Ray Room adjoins the Infirmary, and is equipped with an up-to-date apparatus. The student will be taught the method of regulating equipment, exposing, developing, fixing, etc., and reading negatives. Special attention will be given to the use of pathologic and other conditions.

Students operating in the Infirmary are expected to avail themselves of the X-Ray in all cases where its use will enable them to render better service to the patient.

CLINICAL PROSTHETIC DEPARTMENT.

W. E. Willmott, L.D.S., D.D.S., Professor of Clinical Prosthetic Dentistry.

In the Prosthetic Department the student is required to construct for patients a number of separate cases, applying all of the principles taught by the professor of prosthetic dentistry.

During the recent War, the Military duty of the treatment of fractured jaws and the construction of proper splints has fallen, almost entirely, upon the dental profession. The above represents a collection of casts which record cases carried on in the Ontario Hospital at Orpington, England, by an officer of the Canadian Army Dental Corps, also a member of the Staff at the R.C.D.S., and used as a teaching adjunct in this important branch.

List of Text Books

Prosthetic Dentistry—Wilson, Prothero, Clapp.
General Pathology—Adami on Inflammation, Woolley.
Special Dental Pathology—Black, Burchard, Inglis, Endleman.
Exodontia—Winter, Lederer.
Anaesthesia—Fischer, Lederer, Hewitt, De Ford, Luke, Smith.
Bacteriology and Pathology—Jordan, Goadby, Burchard.
Therapeutics—Buckley, Gorgas, Burchard.
Orthodontia—H. A. Pullen (Johnson's Text-Book of Operative Dentistry), Lischer, Angle, Talbot, Dewey.
Histology—Bailey; Noyes; Hopewell-Smith; Bohm, Davidoff and Huber; Jordan and Ferguson.
Operative Dentistry—Johnson (latest edition), Black, Marshall, Kirk, Brock, Ottolengui, Garretson, Clyde Davis.
Materia Medica and Pharmacology—Buckley, (1917), Long, Prinz (new, 1917). British Pharmacopoeia, 1914. U. S. Pharmacopoeia, 1916.
Dental History—Guerini.
Dental Jurisprudence—Brothers, Mikel.
Ethics—Noyes.
Preventive Dentistry—Pickerill, Sim Wallace, Marshall, Adair.
Anatomy—Gray, Cunningham.
Physiology—W. D. Haliburton, Pearce and McLeod.
Medicine—Osler.
Crown and Bridge—Goslee, Evans, Peeso, Hovestad.
Comparative Dental Anatomy—Underwood, Thompson and Dewey.
Dental Economics—Johnson (Success in Dental Practice), Clapp.
Medical Dictionaries—American, Stedman, Appleton, Gould, Lippincott.
Electro-Therapeutics—Sturridge, McCoy.
Dental Anatomy and Histology—Black, Dewey, Bromell, Hopewell-Smith.
Dental Radiography—McCoy, Ivy.
Surgery—Surgery and diseases of the Mouth and Jaws—Blair; Oral Surgery—McCurdy.
Oral Surgery—Brophy, Kingsley, Blair, Duke.
Organic Chemistry—A Class Book of Organic Chemistry, Cohen.
Practical Organic and Bio-Chemistry, Plimmer
Physiological Chemistry, Mathews.
(Practical work is based on the R.C.D.S. Departmental Pamphlet).
Inorganic Chemistry—An elementary study of Chemistry, McPherson and Henderson.
Inorganic Chemistry, H. M. Gordin.
(Practical work is based on the R.C.D.S. Departmental Pamphlets).
Metallurgy—Practical Dental Metallurgy, Hodgen.
Dental Metallurgy, Hepburn.
Materials and Machines, Smith.
The Elements of Metallography, Ruer.
An Introduction to the study of Metallurgy, Roberts-Austen.
Alloys and their Industrial Application, Law.
Chemical Microscopy, Chamont.
Biology—Practical Zoology, Parker and Parker.
Applied Biology, Bigelow.
Biology, Calkins.

Students will not be allowed to proceed without a proper supply of text-books. Before purchasing books, students will receive instructions from the professor in the department regarding books, latest editions, etc.